

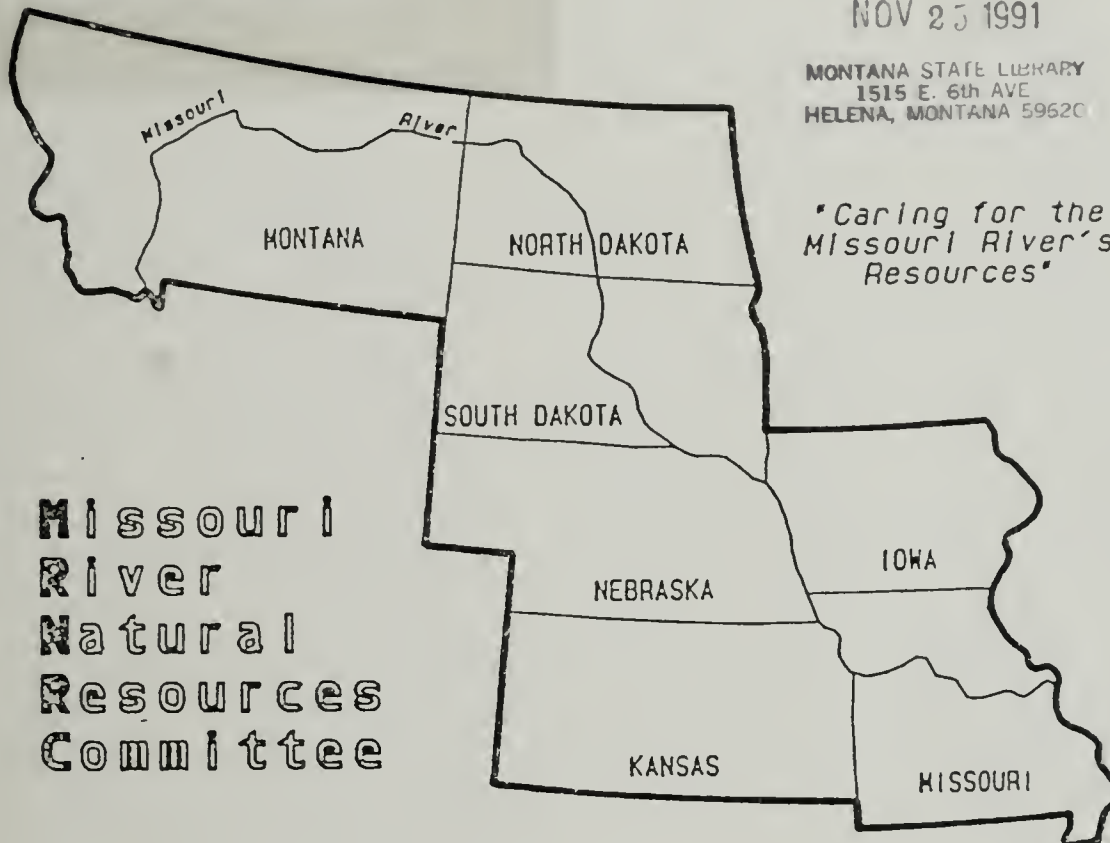
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FIRST ANNUAL PROCEEDINGS  
OF THE  
MISSOURI RIVER  
NATURAL RESOURCES COMMITTEE  
1987

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Officers  
of the  
Missouri River Natural Resources Committee

Elected at  
First Annual Meeting

to Serve During  
1987

Chairman:	Thomas Gengerke Iowa Department of Natural Resources Wallace State Office Building Des Moines, Iowa 50319-0034
Chairman-Elect:	Larry Peterman Montana Department of Fish, Wildlife and Parks 1420 East Sixth Avenue Helena, Montana 59620



PLACE, DATE, AND OFFICERS OF PAST MEETINGS

Place	Date	Chairman	Chairman-Elect	Coordinator
Omaha, NE	Mar. 24, 1987	Tom Gengerke	Larry Peterman	Kent Keenlyne
Milwaukee, WI	Dec. 7, 1987	Tom Gengerke	Larry Peterman	Kent Keenlyne





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## Background to a MRNRC

by  
Dennis Unkenholz

The effort to form a group approach to manage the Missouri River fisheries began over 25 years ago. Like most institutions, it took many years to evolve into the current structure, the Missouri River Natural Resources Committee (MRNRC). The following brief history and comments from Missouri River states were presented at the Dakota American Fisheries Society (AFS) Chapter Meeting in February 1984.

The Upper Missouri River Chapter of the AFS had its beginning in 1963. The first several years were very informal and not highly organized, but by 1967 the group was strong and active. The group was basically formed to address fishery concerns of the relatively new Missouri River reservoir system. Initially the chapter was composed of the Dakotas and eastern Montana. Montana later formed its own statewide chapter. In those days, reservoir research, namely the North Central Reservoir Investigations (NCRI), was operating at full force, and the old Bureau of Commercial Fisheries was alive and well. The states of Montana, North Dakota, and South Dakota were intensely interested in the recently expanded resources.

To specifically address the Missouri River system, in 1969 an Ad/Hoc Committee was established within the Upper Missouri River Chapter of the AFS. This is now the Dakota Chapter. This committee was to convey input from North and South Dakota to the Corps of Engineers (COE) concerning the COE's water management program.

The Ad/Hoc Committee was re-designated as a Standing Committee in 1978. Since then, biologists from Montana and North and South Dakota have alternated two-year terms as committee chairman. In recent years the committee has annually sent a delegation to Omaha and visited one-on-one with the COE concerning operation of the Missouri River System. Nebraska has been part of the spring meeting with the COE since the early 1970's.

Looking back over the years, it seems that the Ad-Hoc/Standing Committee acting for the Upper Missouri River Chapter of the AFS has served a significant purpose. The Upper Missouri River Chapter has felt a growing need for a broader based group to address management of the Missouri River system in recent years.

That brought us to the task of discussing the concept of a Missouri River Management Advisory Group.

Panel members were asked to consider interstate politics, mechanics of operation, perceived purpose, overall benefits, and whether such a group is or is not an appropriate outlet for fishery concerns. Similar such groups have been developed for the Upper Mississippi River and the



Colorado and Columbia Rivers. The following comments were summarized from each state's presentation given at the 1984 Upper Missouri River Chapter Annual Meeting.

Kevin Szcodronsky - Iowa

The question of which states and to what degree involvement should take is a major concern. This was a question in 1982 when a proposal to form a management group similar to the Upper Mississippi River Conservation Committee (UMRCC) was circulated among Missouri River states. There seemed to be no one strong reason why the 1982 proposal was not developed. Iowa supported a coordinating group that would provide for "the professional swapping of ideas." The UMRCC seems to be a logically organized group that may have similar objectives that the Missouri River group might use as a model. The UMRCC has several valuable functions of which the following are examples: dissemination of information, publish appropriate information, collect and store literature relative to the system, and provide political contact for technical information input to decision makers.

Bob Thomas - Nebraska

The concept of a Missouri River Management Advisory Group, which would advocate water management practices beneficial to fishery resources, raised considerable interest and discussion in Nebraska. Discussion centered on review of existing opportunities for input on water management which included (1) the Coordinating Committee on Missouri River Main Stem Operations, and (2) the Missouri River Basin States Association.

The Coordinating Committee involves the Annual Operating Plan as prepared by the Reservoir Control Center, Missouri River Division of the Corps of Engineers. The purpose of this Annual Operating Plan is described as providing a basis for coordination of reservoir operations with the various official interests of federal, state, and local agencies. Official interests are assumed to include fisheries for all the states.

The operating plan is based on carry-over reservoir storage; the outlook for runoff and inflow; long-term operating experience; and, very importantly, the advice and recommendations of the Coordinating Committee on Missouri River Main Stem Operations.

This committee is composed of representatives for the governor of each of the ten states having territory within the Missouri River watershed and representatives of the nine federal agencies directly involved.

In Nebraska, the governor's representative to the Coordinating Committee is the Director of the Department of Water Resources. As a result of communication with the Director of Water Resources, we have been encouraged to present our fisheries recommendations on water management to his office.







Arrangements will then be made for presenting these recommendations at the Coordinating Committee meetings dealing with the Annual Operating Plan. It is suggested that this approach could provide an opportunity for coordinating fisheries interests of the states with input through an existing group that deals directly with water management of the Missouri River System. This approach would preclude concerns about developing and funding another organization.

As mentioned previously, Nebraska also discussed opportunities for input on water management through the Missouri River Basin States Association. However, this association is more aligned with long range considerations and not with annual operations. It is apparent that this group is more concerned with allocation of water in the face of long range projected depletions.

This is not to suggest that fisheries interests are only short-term and that they should avoid contact with the Missouri River Basin States Association. On the contrary, it seems appropriate for fisheries interests to initiate communication with state representatives to the Association, if they have not already done so. Planning for instream flow studies should also be started as soon as possible so that, when allocation of water begins, there is a basis for assessing trade-offs which are sure to arise.

#### Robert Hanten - South Dakota

The Missouri River is a system and must be approached from that viewpoint. Justification for a system approach could include the following points:

- Standardization of sampling methods, time, gear, and reporting.
- Share ideas on equipment, techniques, and approach to management.
- Establish uniform goals, objectives, and priorities.
- Pool biological findings.
- Critique efforts of peers.
- Review proposals for exotic species introductions.
- Present unified front to other agencies.
- Develop system-wide regulations.
- Provide management assistance to other states that would include water level manipulation and allocations.
- Review research proposals.

Many questions arise when the concept of a Missouri River Advisory Group is discussed. Are the upper and lower Missouri River management goals, priorities, and objectives compatible? Are reservoir research and management compatible with the same for the lower river? Could an existing group, such as the Upper Missouri River Chapter of AFS, handle the task of coordination of an advisory group?

When a new group or committee is proposed, many apprehensions arise. One could say - another organization with more meetings and travel, and will it solve problems? How could a fair scheme of representation be developed,



and will everyone conform to majority rule or go their own way? Will such a group have credibility with the Corps of Engineers or the Bureau of Reclamation?

South Dakota will keep an open mind but questions another group that may replace a group that serves a present need.

Duane Sveum - Corps of Engineers, Omaha

Duane presented an overview of the Missouri River Division Reservoir Control Center and a system approach to water management from the Corps' viewpoint or responsibility. The Corps needs input that represents a common consensus rather than individual comments from each state. There are conflicts in water manipulation that could be resolved prior to contact with the Corps if unified recommendations were presented to the Corps.

James Ragan - North Dakota

Comments presented were a personal interpretation of the issue and did not represent the official view the department may have. The Standing Committee of the Upper Missouri River Chapter of AFS has fulfilled a need, and another group may not be necessary. A system approach does have merit, for reasons already stated. Further discussion and searching is essential before an official position could be presented.

Norm Stucky - Missouri

The Missouri River in the state of Missouri is receiving increased attention in recent years. An increase in recreation on the channelized Missouri has been documented. A practical management point of view is essential to this effort. The Missouri River is, has been, and always will be an arena for political wars due to upstream irrigation and other development. An advisory group representing the Missouri River should be a professional spokes group for the Missouri River system. An executive who could coordinate the group would rub shoulders with politicians or other high level decision makers. A major realization is that methods and skills to environmental coordination are and can be learned. The Missouri Department of Conservation is not keen on establishing another group but would support a coordinated, unified group that would communicate a professional approach to Missouri River management to the appropriate groups, be it the Corps of Engineers, Bureau of Reclamation, or political in nature.

Bill Wiedenheft - Montana

A review of Montana's point of view based on success of water manipulation requests for Fort Peck Reservoir was presented. Efforts have resulted in frustration as problems have usually hampered fulfillment of requests for the Missouri River in Montana. The Missouri River is hydrologically,



biologically, and electrically integrated and, because of that, a group approach to system management is supported. The group would prove ideal for communication of unified concerns and technical viewpoints. The present Upper Missouri River Chapter Committee fulfills a need in Montana, and would the formation of another group be necessary?

Joe Dillard, North Central Division (NCD) of the AFS President, present at the 1984 Chapter meeting, offered an invitation to house a possible Missouri River Advisory Group within the NCD structure on a sessional committee basis. The NCD would provide a broader base for support but would allow the Missouri River Group to function within the larger group.

The Pierre office of the Fish and Wildlife Service has offered a part-time effort by Chuck Sowards to provide temporary coordination and nurture for the advisory group concept. This effort could help determine role, goals, and objectives of such a group.





## How The MRNRC Came To Be

by  
Kent Keenlyne

In his report on a background leading up to a coordinated group approach for fishery management on the Missouri River, Dennis Unkenholz described some of the history and past efforts to provide fishery input into the operation of the system and how input was provided to the decision makers in the past. Mr. Szcodronsky briefly mentions a past effort in 1982 to broaden the range of the existing AFS group beyond the area primarily served by the reservoir system, an effort that did not materialize. Several presenters offered a vision of what the role of such a coordinated group might be while others expressed concern that the group not duplicate existing structures, such as the Upper Missouri River Chapter of the AFS Ad Hoc Standing Committee, the Corps' Advisory Committee on Missouri River Main Stem Operations, or the Missouri River Basin States Association. This section describes how the MRNRC came to be.

As early as 1953, the Division Engineer for the Missouri River Division, Corps of Engineers, hosted an Advisory Committee made up of state and federal representatives from the Missouri River Basin whose function was to review operations of the main stem Missouri River. Meetings were conducted by the Corps' Reservoir Control Center group in Omaha twice each year (fall and spring) to review operation of the system and prepare Annual Operating Plans for the upcoming water year. As a result of a need for Congressional approval of advisory committees, the group was disbanded in the early 1980's and replaced by an informal public forum retaining a format similar to the previous advisory meeting sessions. The Upper Missouri River Chapter AFS fishery group, mentioned in the previous section, normally met each spring with the Reservoir Control Center group to offer its recommendations for reservoir management for fishery purposes for the ensuing summer. The AFS meetings would be held before the spring public meeting of the Corps but after snowmelt and runoff projections were available to better estimate the amount of water that would be available in the system.

The fact that a separate fishery group was organized that developed its own means of input into the decision process of operation of the system points out the long standing perception of a special need for a viable means for getting wildlife and related recreational concerns considered in operation of the system outside of existing avenues. Mr. Thomas underscored the concern about utilizing the Basin States Association for such a purpose in that, as a group, the Missouri Basin States Association was more concerned with long-term eventual use of the water rather than present and ongoing uses such as the fishery. Additionally, it was not represented on the Corps' operations advisory group as a separate entity. With dismissal of





its permanent staff in 1987, the Missouri Basin States Association became even a less viable option for providing the necessary vehicle to supply coordinated wildlife and related concerns in the river management process. With the absolving of the Advisory Committee and the reduced role of the Basin States Association, the vehicle for state input into river operations was held in limbo.

As a Service representative to the Spring 1983 Missouri River Water Management Meeting, Kent Keenlyne proposed that the Corps consider funding and development of long-term reservoir management and river flow plans for the fishery and associated recreational benefits. This led to recent considerations for offsetting of the upper three storage reservoirs during high and low water years. In April 1985, during the spring meeting for the Annual Operating Plan, he presented a 20-year proposal which included developing multi-year and long range studies and plans for better management of the system in relation to natural resources. Included was consideration of a cooperative program that included all of the affected states. Then Deputy Division Engineer Lee W. Tucker requested that the Service set up a meeting with the Corps to further discuss this concept.

Service and Corps' personnel met in Omaha on August 22, 1985, to further explore options for better coordination on natural resource issues on the Missouri River and particularly for obtaining coordinated recommendations. Mr. Bill Martin, U.S. Fish and Wildlife Service, Denver, explained that the Service was going to be taking a stronger leadership role on the Missouri and would be working closely with the respective state agencies. The Corps indicated concern that they were receiving conflicting recommendations from various resource factions and not infrequently from within individual agencies. Their position could be greatly improved if a coordinating group could be established with official spokesmen from each of the factions to represent the agency. Although the AFS fishery group was greatly appreciated, they were not officially designated representatives of the states, state agencies, or departments of federal agencies, nor did the group represent all like interests up and down the whole river. The two agencies agreed to jointly host a meeting with the seven interested state agencies to gain their ideas on how better coordination could be achieved.

On November 19, 1985, the above referenced session was held in Omaha where several examples of existing coordination programs on large rivers were described. All seven Missouri River states were in attendance and, after a state caucus, presented their preferred option which established the format for the MRNRC. The Service agreed to provide a technical coordinator for the group to be physically located somewhat centrally on the river. Nebraska served as recorder for the state caucus and presented the Service with the substance of the agreed to concept of the states of a natural resource committee with member states and ex-officio participation by the two federal agencies, the Corps of Engineers and the Fish and Wildlife Service.



On December 8, 1986, an organizational meeting was held in Omaha, Nebraska, in association with the Midwest Fish and Wildlife Conference, to elect officers for the group, outline the general scope and function of the committee, and review constitution and bylaws documents for the group. Thomas Gengerke, Iowa, was elected as the first Chairman with Larry Peterman, Montana, as the Chairman-Elect. The chair would alternate between upriver and downriver concerns and follow this sequence: Iowa, Montana, Kansas, North Dakota, Missouri, South Dakota, and Nebraska.



UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
South Dakota Field Office (ES)  
Post Office Box 986  
Pierre, South Dakota 57501

April 16, 1987

Mr. Duane Sveum  
Reservoir Control Center  
Corps of Engineers  
P.O. Box 103 Downtown Station  
Omaha, Nebraska 68101-0103

Dear Duane:

Attached are the written recommendations for reservoir levels and releases in conjunction with our March 24, 1987, meeting in Omaha. I was pleased that the meeting went so well for our first effort.

It would be appropriate to also summarize our meeting results and suggestions that came up but are not contained in these individual responses. First, there is a difference in the written minimum releases below Gavins Point between the two bordering states. As pointed out at the meeting, South Dakota had indicated that its release recommendation of 20,000 cfs was based on information that was obtained by Wahlburg many years ago, which probably no longer adequately reflects the present situation since considerable degradation has occurred in the area since. All the states agreed that a need exists for better instream flow kinds of information. A second general recommendation was that the RCC continue to call field staff, particularly during the spawning season, if changes are being considered in operation of the system. Third, an invitation was offered to visit the projects with the various state people to help obtain a more clear understanding of the backgrounds for specific recommendations that the group makes. The last item we discussed, which I believe George Patenode indicated would be useful to him, would be to prepare our general written comments (similar to these) in October or November. Fine tuning of recommendations could then occur in March, at the time we commonly meet, once snow and runoff projections become available.

I have attached Missouri's letter for your information. None of the three lower states had specific flow recommendations this first time around but, as Mr. Gengerke pointed out, they are all pleased with the Committee and have great expectations on its usefulness.



Again, thanks for providing a meeting room for this session, and we look forward to improving our effectiveness in the future.

Sincerely,

Kent D. Keenlyne  
MRNRC Coordinator

Attachments





NEBRASKA  
MISSOURI RIVER RECOMMENDATIONS  
For CY 1987  
Fisheries

1. Return to highest discharge possible each spring as ice conditions permit and then maintain 30,000 cfs out of Fort Randall through 31 July.
2. Eliminate peaking during April through June at least.
3. Adopt policy of no dewaterings through July for drownings, inspections, or minimal flood conditions.
4. Shutdown releases in fall only as ice or weather conditions dictate; become aware of impact reduced flow has on waterfowl hunting and other resource related activities.
5. Notify the Fisheries Division (402/464-0641, Ext. 215) in Lincoln at least several days prior to any scheduled dewatering; and as soon as possible prior to unscheduled reductions in discharge from Fort Randall Dam (April 1-August 31).

The above recommendations, especially 1, 2 and 3 are considered vital to maintaining the ecosystem and its inhabitants below Fort Randall Dam.

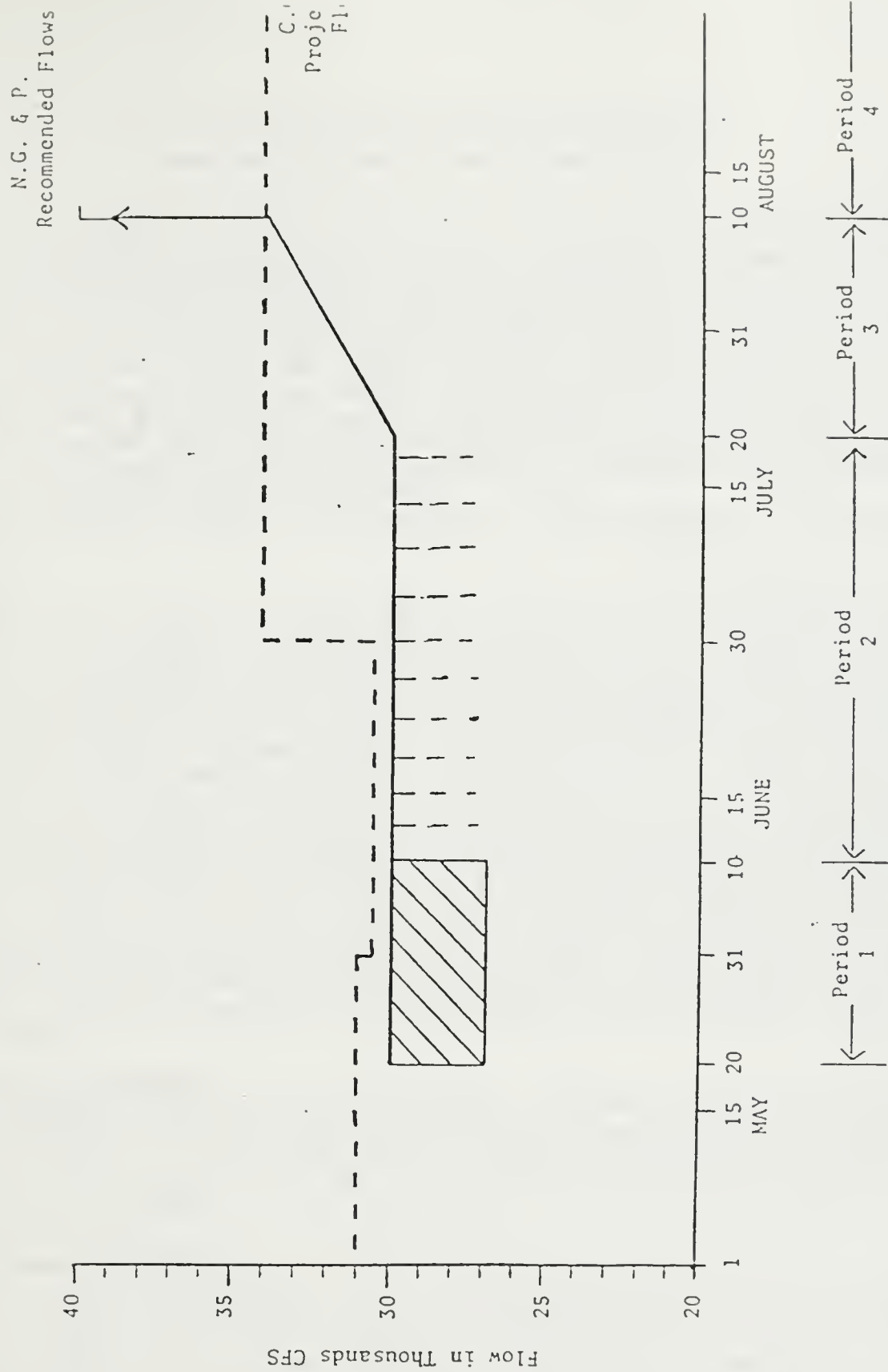
Endangered/Threatened Species Below Gavins Point Dam

Species	Time Frame	Target Flows
		Median Flow Years
Interior Least Tern	May 20-June 10	27,000-30,000 cfs
Piping Plover	June 10-July 20	<30,000 cfs if at all possible
	July 20-August 10	30,000-34,000 cfs
	August 10	Any

The rationale for the terns and plovers has been previously submitted to the C.O.E. in June 1985. Attached please find Figure 1 which depicts the above recommendations.



FIGURE 1. Gavins Point Releases and Flow Recommendations for the Least Tern, and Piping Plover.





## 1987 South Dakota Missouri River Reservoir Water Levels and Tailwater Release Recommendations

Missouri River water manipulation is one of the major fisheries management options available for fisheries, wildlife and recreational management in South Dakota. Information gathered over the years has shown water levels and vegetation regrowth are critical to successful fish reproduction and recruitment on these large reservoirs. Research also indicates that the timing and amount of released water are limiting factors for least tern and piping plover populations. A system-wide approach to water management is supported by South Dakota.

Water level scenarios for each of South Dakota's mainstem reservoirs are somewhat different. Requests are, therefore, presented by reservoir and tailwater reach. This recommendation also reflects water level management that is compatible with park use and tern/plover habitat needs.

The following requests are specific to each respective reservoir and tailwaters:

### Lake Oahe

Water level requests for Oahe reservoir in 1987 are to allow the water level to gradually rise through the spring and early summer but not to exceed 1610 - 1612 elevation. No vegetation exists below elevation 1618 as all existing vegetation was flooded and destroyed during 1986. The 1987 recommendation follows the 1985 and 1986 request that was designed to develop shoreline vegetation. The 1988 and 89 request will take advantage of the new vegetation produced in 1987 to provide ideal northern pike spawning habitat. A good year class of northern pike was produced in 1982. Vegetation conditions in 1986 were excellent but the timing of water levels, vegetation inundation and northern pike spawning did not materialize. Essentially all vegetation was destroyed during 1986 and northern pike reproductive success was poor. Several years are necessary to produce adequate vegetation. In the past, high and low water years have facilitated vegetation regrowth. Sandbars, silt flats and islands exposed on Lake Oahe during the initial years of recommended draw downs should provide relatively secure nesting habitat for terns and plovers as was evidenced in 1982. The scenario of draw down, vegetative regrowth, flooding and draw down will likely benefit terns and plovers as well as northern pike.

### Specific Project Requests

All marginal use boat ramps were extended to elevation 1600 during 1985 and are functional to 1602. When reservoir elevations decrease below 1596, boat ramps will be extended. Extension of the fish ladder at Whitlocks will occur if reservoir elevations drop below 1600. No specific water levels are requested for construction during 1987.

### General Recommendations

Allow Oahe to rise gradually until mid May and hold stable through July, then decline through the late summer and fall. This scheme could occur at any beginning elevation. When good shoreline vegetation is established, a water-level scheme must be planned to best use the vegetation during the proper spawning period or even the best year. Vegetation can be saved or used in part or over several years if managed properly. Vegetation also protects shoreline erosion which has been severe the past two years.

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### Oahe Tailwaters

Tailwater releases should not drop below 10,000 cfs on weekends during April - September. This would enhance use by the public and stabilize aquatic habitat in the river from the dam to the upper end of Lake Sharpe and potentially prevent ice jams during the winter.

Habitat in the river below Oahe Dam becomes unusable by aquatic organisms when low flows exist. This displaces fish and other aquatic animals and thus impacts stability of the aquatic community in this valuable river reach.

### General Recommendations

Stabilize releases during spring spawning and fishing season. During periods of high turbid flows from the Bad River release large amounts of water to flush sediment downstream. Watershed management should be planned in the Bad River drainage to minimize sediment loads from the Bad River.

Any dredging activities in this area should be designed to build artificial nesting structures for terns and plovers. Efforts could be made to concentrate dredge spoils which have been used by both species as nesting habitat in other states.

Continue to study the problem associated with winter ice jams and reduced flows from Oahe. The larger question of aggradation should be addressed and the impact that it has had and will have on future flows during all times of the year should be defined. The Pierre/Ft. Pierre study has addressed the question of ice damming from a power production viewpoint. The problem needs to be viewed from a biological/recreational viewpoint as well.

### Lake Sharpe

Due to the usual stable operation of Lake Sharpe, we offer no changes to current operating plans for that reservoir. The sport fishery in Lake Sharpe appears to be the most stable walleye fishery of the four reservoirs.

### Extremes to Avoid

Weekend elevation fluctuations greater than 2 feet should be avoided. This affects access at Farm Island, and West Bend. Lake elevation should be held greater than 1419.5. (Note: The Corps of Engineers may need help on water levels to accommodate the planned dredge at West Bend).

### General Recommendations

Good current operating plan for Lake Sharpe.

### Big Bend Dam Tailwaters

Maintain an instantaneous release of 10,000 cfs to stabilize fishing over the weekend and minimize affect of fluctuating water levels on fish. As with the Oahe tailwaters area, any dredging activities could be used to create artificial nesting habitat for terns and plovers. Historic data indicates this area was used during the 1970's by nesting least terns.

### Extremes to Avoid

Releases no less than 10,000 cfs are recommended unless make up water from emergency spillway produces a 10,000 cfs minimum.





### Lake Francis Case

Maintain reservoir elevation at 1356 until June 1 is a recommendation aimed at providing adequate spawning conditions in Lake Francis Case. Stable or rising water levels and local tributary inflows during the spring (April - May) are keys to successful walleye spawning on Lake Francis Case. During 1985 when spring water levels, at the beginning of the walleye spawn (Mid April), were at 1352, 80% of the walleye eggs were deposited in less than 3 feet of water. Small drops in reservoir elevation will have significant impacts on incubating eggs. Walleye egg incubation commences in mid-April and hatch usually will conclude by the third week in May. Maintaining water levels into June will facilitate spawning of other species such as yellow perch, emerald shiners, crappies and white bass. Elevation near 1356 will also aid in efforts to collect paddlefish brood stock. One location that has consistently held mature paddlefish during the spring is the area immediately south of the White River delta. During 1986 when the White River flowed heavily, a run of spawning paddlefish was documented. A spawned female was collected nearly six miles up the White emphasizing the importance of tributary inflows.

Shoreline vegetation is nonexistent in Lake Francis Case. Reduction of reservoir elevation to 1355 by July 1 will allow a major portion of the growing season for shoreline revegetation. Depending upon the amount of regrowth that occurs during 1987, reservoir elevation may be held at 1354 for the 1988 season to further develop terrestrial vegetation for fish spawning (Dr. Hoffman's work -COE funded study). Northern pike, a species which needs flooded terrestrial vegetation to spawn, is desired by anglers coming to L.F.C. and at one time was an important sport fish in this reservoir. Recent work by the SDGF&P to reestablish this species through a hatchery stocking program and sub-impoundment system, has now appeared to have increased Northern Pike population levels to a point that sufficient numbers of mature fish should exist during 1988 and 1989 to spawn naturally, should suitable habitat conditions exist. Table 1 lists "target" L.F.C. reservoir water elevation request for 1987. These elevations will assure boat ramp access and avoid shoreline damage that has been significant in past years when above elevation 1357.

Table 1. Requested 1987 reservoir water levels in L.F.C. at selected dates.

<u>Date</u>	<u>Requested Elevation (msl)</u>
March 1	1352 (COE Projection)
April 1	1354
May 1	1356
May 15	1356
June 1	1356
June 15	1356
July 1	1355
August 1	1354
September 1	1353
September 15	1353



### Extremes to Avoid

- 1) Any decreases in water elevation from mid April through mid June.
- 2) Elevations greater than 1360 will cause damage to boat ramps, parks facilities, fisheries facilities, and will increase shoreline erosion.
- 3) Elevations below 1353 during the recreational season of Memorial Day to Labor Day are undesirable and elevations less than 1345 limits almost all boating access.

### Specific Projects Request

Elevations greater than 1345 are necessary until November 1 for operation of the American Creek Imprint Station located at Chamberlain. Plans are to Imprint and Introduce trout at the American Creek facility.

### General Recommendations

Stable to rising water elevations from mid April through mid June. No drops in elevation during this same period. Shoreline vegetation is in small supply on L.F.C. Two growing seasons may be necessary to produce good regrowth that will be useable by spawning fish. Normal fall drawdown severely limits littoral zone production of bottom organisms, which are important fish food items. Any reduction in the amount of fall drawdown would benefit benthic production and in turn provide a boost to the fishery.

### Fort Randall Tailwaters

The traditional request for stable releases of 20,000 cfs is requested for Fort Randall Dam. This would allow adequate flows to provide suitable spawning habitat in the river to Lewis and Clark Lake. Riverbed degradation and sandbar movements have decreased the effect of 15,000 cfs flows on the spawning habitat. Spawning substrate is at an elevation that requires 20,000 cfs to inundate suitable spawning habitat.

Sportfishing is enhanced by flows greater than 20,000 cfs by providing good access to the river, stable flows, and minimized effects resulting from peaking. Low angler use was documented during 1984 through 1986 due to extremely low releases from Fort Randall Dam during the spring.

Of special concern in this region and the Gavins Point tailwaters section are the high concentrations of nesting terns and plovers. Releases should be coordinated to concentrate birds on suitable habitat and maintain safe habitat during the critical June and July portions of their nesting season. High water releases (35,000 cfs or higher) during the fall or winter could be used to scour existing sandbars thereby removing vegetation in addition to creating high profile sandbars. Water level management that would facilitate least tern production should be appropriate for fisheries needs as well.

### Extremes to Avoid

Flows less than 20,000 cfs during the spring period and flows less than 10,000 cfs the remainder of the year should be avoided. Water could be released from spillway to supplement flows during plant inspections.

### Specific Project Requests

In-stream flow study needed to address critical life stages and associated habitat needs of existing fish populations. Spring flows of 20,000 cfs to allow adequate water levels on habitat for spawning fish.

### General Recommendations

Minimize peaking and flows less than 20,000 cfs to enhance sport fishing.



### Lewis and Clark Lake

Due to physical characteristics of Lewis and Clark Lake, little shoreline or aquatic vegetation exists. The few small bays that occur have been closed to the reservoir by wave and sediment action. The reservoir should be held slightly higher in the spring and slightly lower in the summer and fall so that a more normal lake-like pool is maintained through the entire year.

### Extremes to Avoid

Elevations of 1208 or greater should be avoided because of extreme shoreline erosion that occurs. Shoreline damage occurs along the parks and causes damage to developed areas.

### Gavins Point Tailwaters/Lower Missouri River

The natural river portion from Gavins Point Dam to Ponca, NE harbors critically important nesting habitat for terns and plovers. We strongly suggest that a coordinated plan be developed to provide safe nesting habitat, protection from human disturbance and continued funding for needed research concerning Interior least terns and piping plovers. The suggestions for the Fort Randall tailwaters would also apply to the section below Gavins Point Dam. Releases from Gavins Point traditionally are stable and we support that operating plan. We do question the need for annual de-watering for inspection because of its effect on attached organisms. If other inspection methods such as the use of divers or cameras are available, we would support that rather than de-watering. We appreciate the 1985 inspection method of maintaining adequate flows by releasing water from the spillway.

### General Recommendations

Continue stable releases and implement least tern/piping plover management plans. Flows called for in that plan should not threaten fisheries.





## Planned 1987 Fish Stockings

### Oahe Reservoir

Brown trout	75,000 ylg.
Steelhead trout (Skamania strain)	50,000 ylg.
Chinook salmon	1,000,000 fgl.
Walleye	2,018,750 fry
Walleye	229,000 fgl.
Smallmouth bass	150,000 fgl.

### Spring Creek Subimpoundment

Walleye	900,000 fry
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### Lake Sharps/Oahe Tailwaters

Brown trout	20,000 fgl.
Tiger musky	50,000 fgl.
Smallmouth bass	50,000 fgl.
Largemouth bass	50,000 fgl.
Bluegill	100,000 fgl.
Paddlefish	25,000 fgl.

### Oahe Subimpoundment

Smallmouth bass	100 adult
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### Lake Francis Case/Big Bend Tailwaters

Brown trout	25,000 ygl.
Rainbow trout	75,000 fgl.
Northern pike	200,000 fgl.
Tiger musky	100,000 fgl.
Smallmouth bass	100,000 fgl.
Largemouth bass	200,000 fgl.
Walleye	250,000 fgl.
Crapple	250,000 fgl.
Paddlefish	25,000 fgl.

### Dry Creek Subimpoundment

(Platte Creek)	30,000 northern pike fgl.
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### Lewis and Clark Lake/Ft. Randall Tailwaters

Cutthroat trout	75,000 fgl.
Walleye	250,000 fgl.
Musky	50,000 fgl.
Largemouth bass	100,000 fgl.
Paddlefish	25,000 fgl.

### Lewis and Clark Tailwaters

Musky	50,000 fgl.
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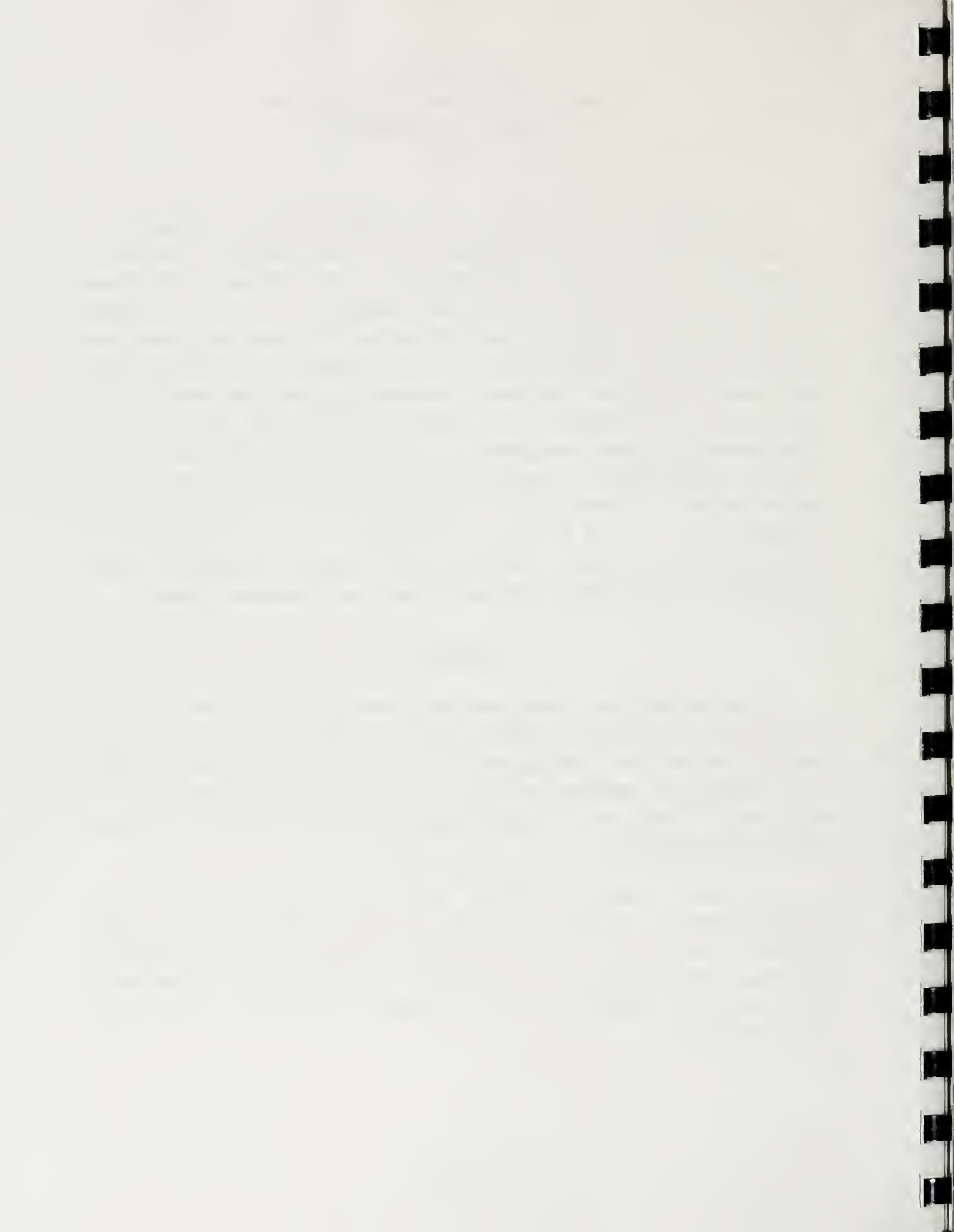
NORTH DAKOTA  
MISSOURI RIVER RESERVOIR WATER LEVEL AND  
IN-STREAM FLOW RECOMMENDATIONS  
1987

The importance of timely water level manipulation on the Missouri River for fish and wildlife resource management can't be over emphasized, nor can the destructive capacity of untimely manipulation be underestimated. After twenty years, water level management strategy has completed a full cycle in an attempt to address the needs dictated by dominant species. The prescribed changes were as much the result of system instability as our inability to foresee the long-range impact of reservoir operations. Information gained from thirty years of Missouri River investigations now outlines the methods and importance of a System Approach to water management as a tool to enhance fish and wildlife resources. North Dakota's recommendations address both fisheries and endangered species concerns. Water levels in reservoirs are of primary concern for fisheries, while in-stream flows are most important for endangered species using the Missouri River corridor. These two areas of concern are compatible under a well thought out and carefully implemented water level management scheme.

FISHERIES

Strong walleye year classes have been documented in our reservoirs when: 1) pool elevations inundated optimum spawning substrate; 2) water levels rose rapidly during and after spawning; and 3) weather conditions remained seasonably mild throughout the spawning and incubation period. In the general absence of one or more of these factors, Lake Sakakawea has produced only one strong year class (1982) since 1979.

A systematic approach to manage the Missouri mainstem reservoirs in an unbalanced mode was adopted by the Corps' Reservoir Control Center in 1985. Although the results thus far have been mixed, the potential of this approach is very encouraging. The flexibility provided by this plan should accommodate an orderly and timely means of substrate development and fish habitat utilization in our reservoirs.



#### Lake Sakakawea:

Water level recommendations for Lake Sakakawea follow the same basic request submitted in 1986. Our first priority is to produce a strong walleye year class. As such, a minimum reservoir pool elevation of 1840 feet msl is needed by April 15th, followed by a constantly rising reservoir pool (four to six foot rise evenly distributed) through June 15th.

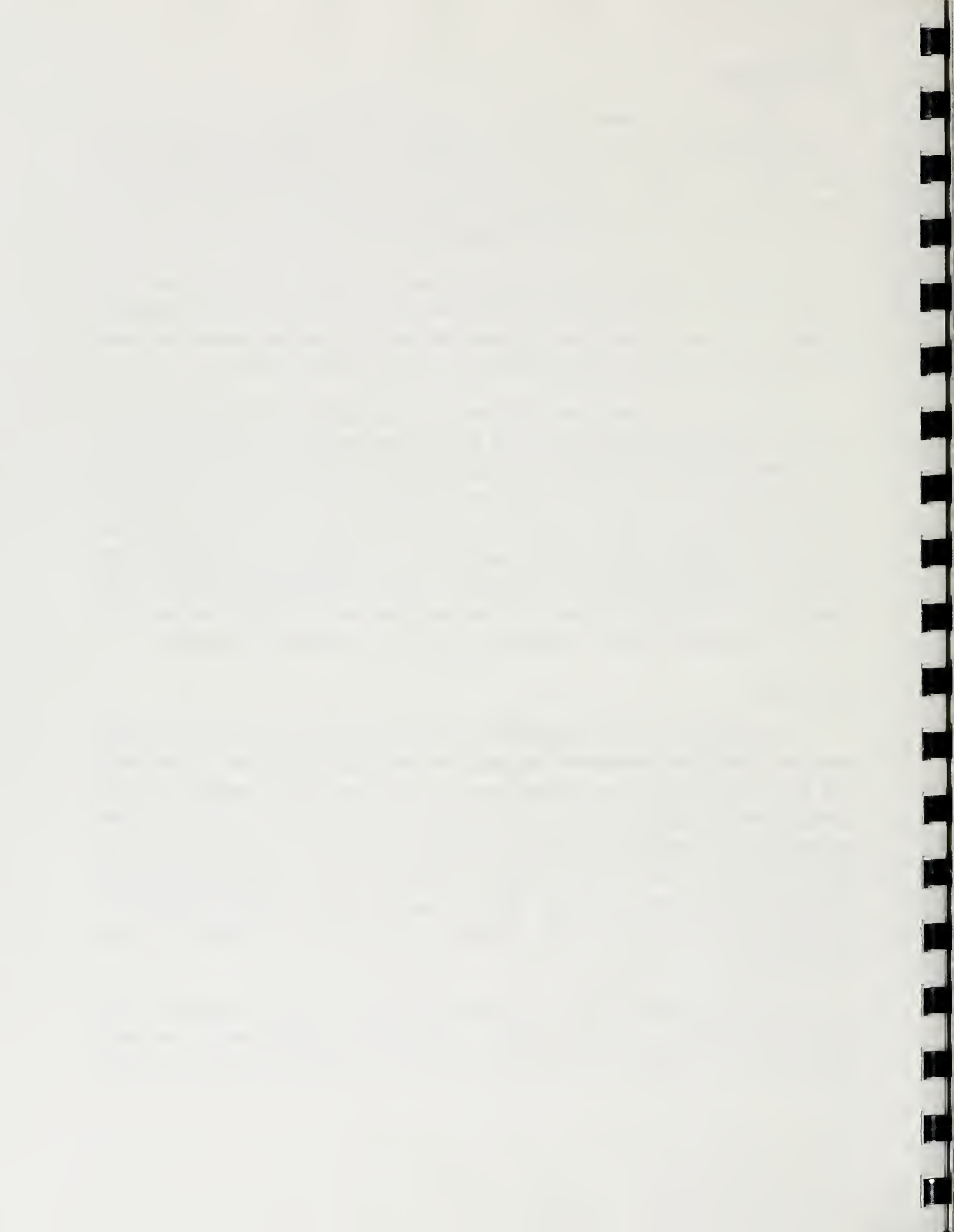
In 1986, the 1840 elevation request wasn't achieved until late May which limited the availability of suitable substrate during the walleye spawning period. The rate of pool rise, although delayed, did inundate vegetation above 1842 providing excellent rearing habitat for later spawning species.

At the present time, Lake Sakakawea is at an elevation of 1840.2 feet msl. Recent telephone communications with Duane Sveum and Bill Wiedenheft suggest that reduced Garrison releases will help maintain an elevation of 1840 on Lake Sakakawea while providing a rise in the Fort Peck pool. This will accomplish two system goals: first it will place the Fort Peck pool where vegetation can be easily inundated during spring spawning, and secondly it will provide the minimum elevation required for inundating walleye spawning substrate in Lake Sakakawea. Additional moisture in the watershed above the Garrison Dam will likely be needed to assure an adequate rate of pool rise on both reservoirs.

#### Lake Oahe:

Our 1986 water level recommendations on Lake Oahe were consistent with the unbalanced reservoir management strategy for enhancing revegetation on Fort Peck and Oahe Reservoirs while storing water in Lake Sakakawea. Unexpected heavy spring runoff, however, resulted in an April elevation that exceeded the 1985 maximum pool on Oahe. Good spawning substrate and rapidly rising water levels not only offset poor spring weather conditions, but inundated vegetation (established in 1985) providing excellent rearing areas. This timely set of circumstances produced one of the strongest years for fish recruitment on record for Lake Oahe.

Fish recruitment in the upper portion of Lake Oahe has generally been highest when spring elevations flooded vegetation above 1610 feet msl and rose through June. Elevations above 1610 are ideal for establishing vegetation and



subsequent inundation for spawning purposes. As such, our 1987 water level recommendations for Lake Oahe are to increase the elevations gradually through June and not to exceed 1610 feet msl this year. Additional moisture in the watershed below the Garrison Dam will likely require an earlier increase in the evacuation of water from Oahe while increasing the amount of water stored in Sakakawea and Fort Peck.

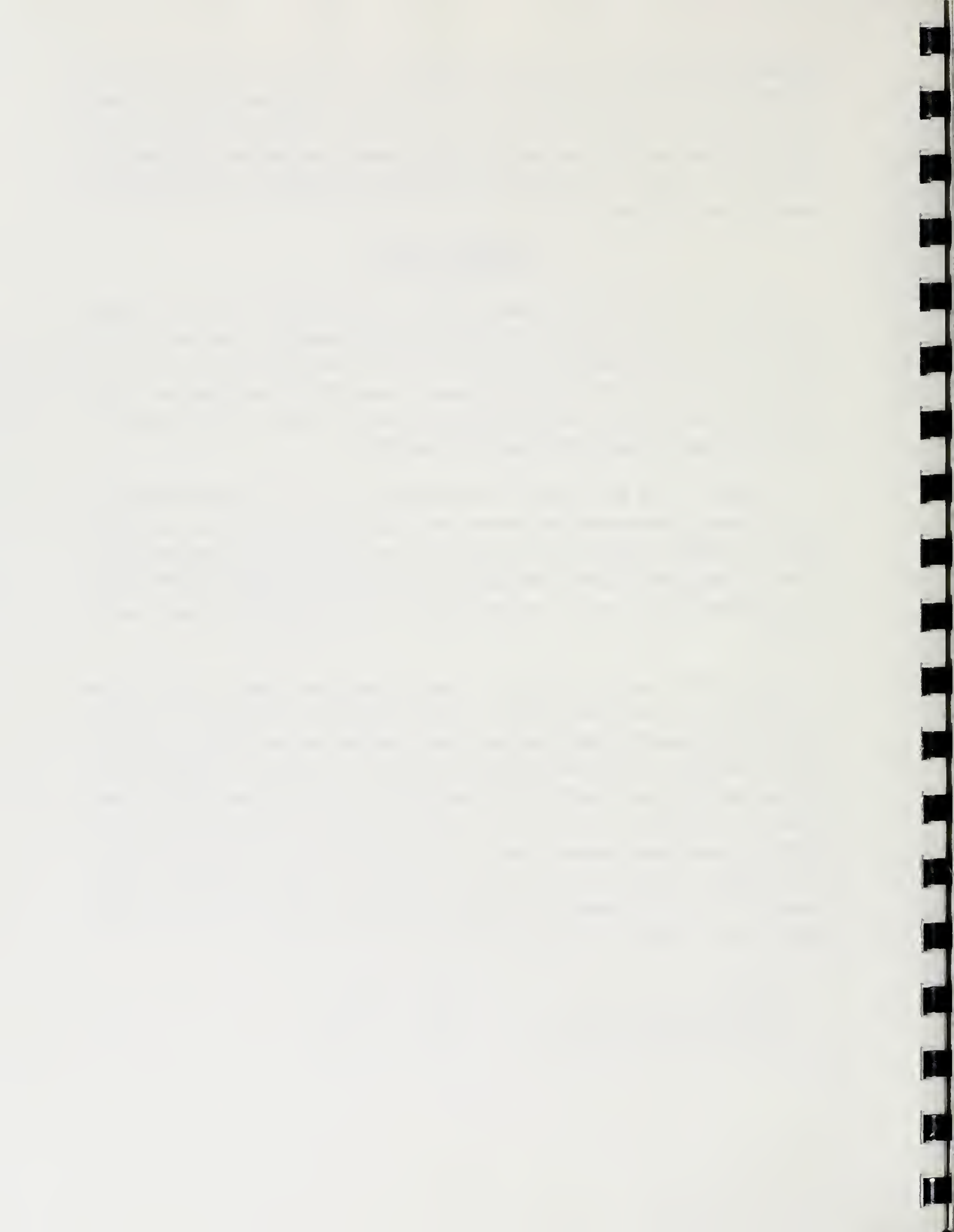
#### ENDANGERED SPECIES

The sandbars of the Missouri River in North Dakota provide important nesting habitat for two federally listed rare bird species. The interior least tern is listed as endangered by the U.S. Fish & Wildlife Service, while the piping plover is classified as threatened. These official designations require all federal agencies to consider and avoid adverse impacts to the species that may result from actions of the agency in question.

Surveys by the N.D. Game & Fish Department, U.S. Fish & Wildlife Service, and N.D. Parks & Recreation Department since 1982 have documented a substantial number of nesting least terns and piping plovers utilizing the Missouri River below Garrison Dam. During 1986 approximately 167 least terns and 100 plovers were recorded on the Missouri River between Garrison Dam and the upper end of Lake Oahe.

Least terns nest in colonies on sparsely vegetated sandbars often located in mid-channel of the Missouri River. These sandbars are sometimes low-lying or high and dry depending upon water releases from Garrison Dam. Eggs are laid in shallow scrapes in the sand and approximately 70 days are required for a breeding pair to hatch and fledge a single brood. Early season losses of nests or week old chicks may result in a re-nesting attempt. Piping plovers are very similar to least terns in both habitat requirements and nesting chronology, with the exception that plovers may nest a few days earlier than least terns. Although it has been shown that nesting chronology patterns may vary somewhat between years, a general calendar can be described as follows:

Arrival	- May 1 - May 15
Nest Initiation (10-17 days)	- May 15 - June 10
Incubation (18-21 days)	- June 1 - June 30





Nestling stage (18-21 days) - June 10 - July 31  
Post Fledging Period (20 days) - July 31 - August 20

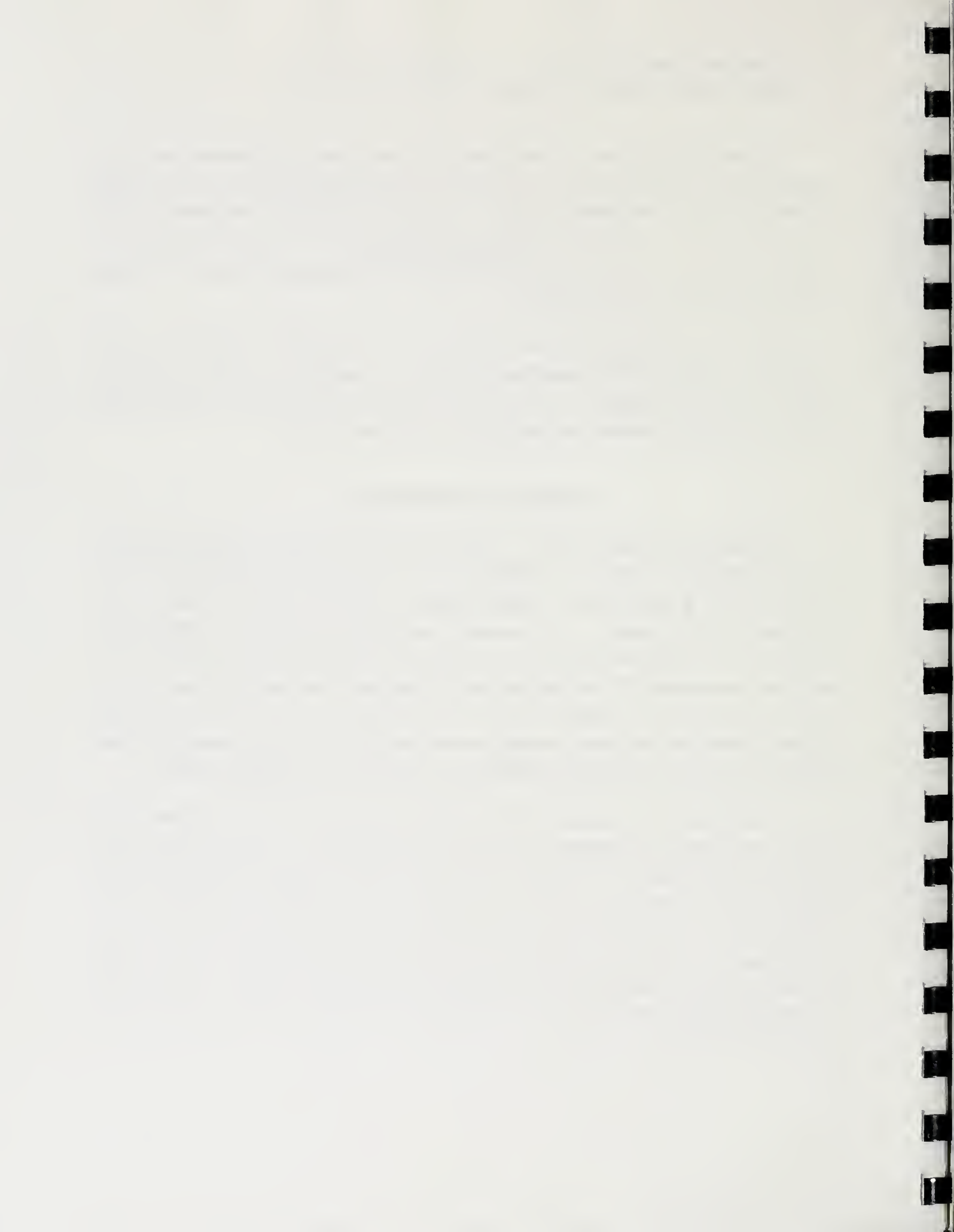
As federally listed species, the U.S. Army Corps of Engineers must give consideration to requirements of the least tern and piping plover in development of Missouri River management plans. Currently water level management on the Missouri River has the potential to significantly inhibit the productivity of these species to a point where sustaining the existing population and eventual species recovery are unattainable.

Under the present management scheme, low flows during courtship and nest initiation periods often encourage nesting on sandbars at lower elevations. Higher flows that commonly occur during the egg laying, incubation and brooding periods flood the sandbars destroying eggs and young chicks.

#### SUMMARY OF RECOMMENDATIONS

Systematic storage of water in the upper three Missouri River Reservoirs can accommodate a cycle of revegetation and subsequent inundation for fish spawning while providing more uniform project releases that would benefit least terns and piping plovers. The scenario depicted by our 1987 recommendations provides for 1) maximum storage at Fort Peck to optimize spring utilization of shoreline vegetation, 2) maximum storage in Sakakawea to enhance walleye production, 3) controlled releases from the Garrison Dam to protect endangered bird species during the critical nesting season, and 4) a ceiling elevation of 1610 feet msl on Oahe to establish vegetation for future fish spawning habitat.

A combination of factors left us with no alternative but to recommend high spring elevations in Sakakawea for the past five years. Like Fort Peck and Oahe, Lake Sakakawea is in need of a low water cycle to improve walleye spawning substrate below 1838 feet msl and provide for revegetation above 1842. Our recommendations in 1988 will likely include a ceiling elevation of 1842 feet msl on Sakakawea to achieve these goals. This would require maximum storage in Oahe and thus provide a means to flood vegetation established in 1987. The low cycle on Sakakawea would also provide an opportunity to install boat ramps and improve existing facilities.





Successful nesting by least terns and piping plovers could be insured through minimum alterations in current reservoir and river system operations. The river level requirements of the birds are the same year in and year out, steady or decreasing flows during the time period May 1 to July 31. Maximum steady flows from Garrison Dam should not exceed 32,000 cfs and the preferred range for optimum availability of nesting habitat would be between 15,000 and 23,000 cfs.

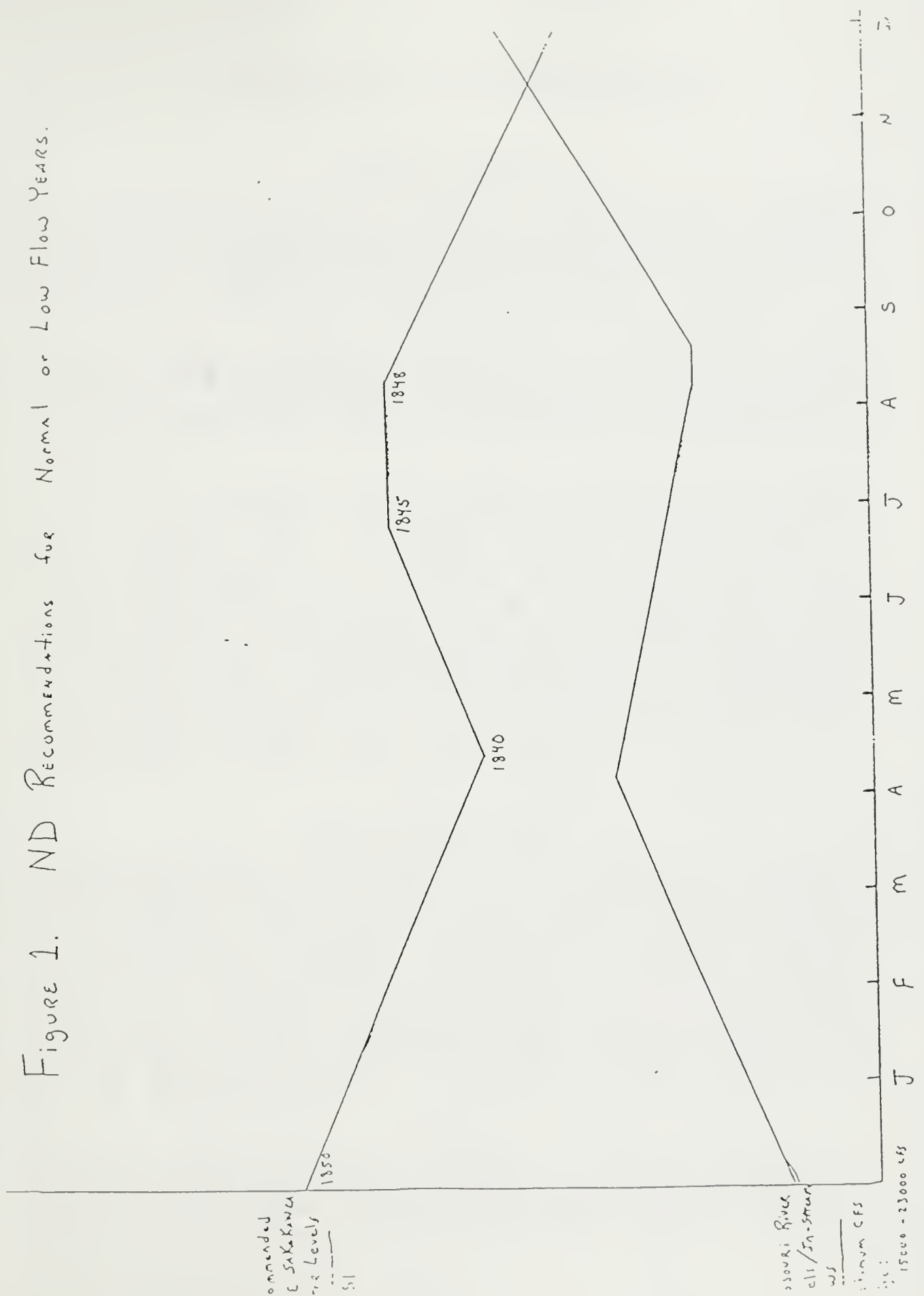
The North Dakota Game & Fish Department believes that fisheries and endangered species can be effectively managed on a compatible basis within the Missouri River system of North Dakota. Figure 1 illustrates the desired water levels for Lake Sakakawea and Missouri River in-stream flows during a normal or low flow year. The hour glass configuration of the illustration shows that fisheries needs in the reservoir dovetails almost exactly with the nesting requirements of endangered birds on the Missouri River below Garrison Dam.

Years with extremely high flows (i.e. 1975) create major problems for all aspects of Missouri River system management. Those infrequent years with extraordinary high water levels throughout the system will have to be dealt with as the need arises and concessions will have to be made by all affected elements. In most years, however, fisheries and endangered species concerns are indeed compatible on the Missouri River System in North Dakota.

Miss.R1 Miss. R4  
#3 Nat. Res.



Figure 1. ND Recommendations for Normal or Low Flow Years.





## 1987 WATER LEVEL / FLOW RECOMMENDATIONS

### Fort Peck Reservoir

The March 1987 Inflow Forecast provided by the COE, indicates that a rising pool may occur from early March through late April. The lake is predicted to reach a maximum elevation of 2239.2 ft. by April 30. Once the maximum level is reached, it appears that the pool will remain at, or near this level until September.

Basically, this scenario fits well into the Department's long-range water level management plan, which was initiated in 1985. The Corps' present reservoir regulation plan has the potential to provide at least some water to inundate shoreline vegetation which was established above last year's maximum lake elevation of 2238.3 ft..

A more ideal situation, however, would be achieved by bringing the pool to an elevation exceeding the present predicted maximum by at least one foot. This would provide sufficient water to cover vegetation at a slightly higher elevation, thereby inundating vegetation which may have been spared from ice and wave action when the lake was at the 1986 maximum. It is recognized that achieving this goal is contingent on receiving sufficient inflows to meet minimum discharge requirements below the reservoir, but if Mother Nature cooperates, it is recommended that the COE strive to attain a higher pool. Young fish produced as a result of attaining a suitable maximum water level would benefit from a static pool, as more submerged vegetation would be available to provide good rearing cover.

### Lower Missouri River

Previous discharge recommendations have stated that a minimum instantaneous flow of 6,700 cfs be maintained from April 1 through September 15 for optimum spawning and rearing of rainbow trout, and an instantaneous flow of 4,500 cfs be the absolute minimum necessary to sustain recruitment. Additional flow data and better computer analysis have provided a method to further refine the discharge/flow relationship curve for the rainbow trout side channel. Based on this new curve, the minimum instantaneous discharge should be adjusted upward to 7,800 cfs to provide 250 cfs in the side channel. This flow was determined to be the quantity necessary to maintain optimum spawning and rearing for rainbow.

As stated above, previous recommendations have also asked that minimum flows be maintained from April 1 through September 15. The latter date was selected because it was theorized that this would allow sufficient time for young rainbow rearing in the side channel to mature, and to adapt to erratic flows. However, in



the fall of 1986, two days after the flow period recommended, discharges from the dam were rapidly dropped to 0 cfs and remained shut off for approximately 8 hours. This resulted in severe dewatering of the side channel and loss of most of young rainbow production in 1986.

In order to prevent such a catastrophe from occurring in the future, it is now recommended that an minimum discharge of 2,700 cfs be maintained after September 30, to provide adequate flows in the side channel for survival of rainbow trout young-of-year. This flow would also provide some water for fall spawning chinook salmon. As yet, no run has developed from salmon stocked below the dam, but the large numbers and good condition of salmon planted in 1984, may produce a successful run in 1987.

The 1987 discharge recommendations for the Missouri River below Fort Peck Dam are summarized as follows:

A minimum instantaneous flow of 7,800 cfs should be maintained from April 1 through September 30 to provide optimum spawning and rearing conditions for rainbow trout. An instantaneous discharge of 4,500 cfs is the absolute minimum needed to sustain recruitment. After September 30, a minimum instantaneous discharge should be maintained at, or above, 2,700 cfs.

As has been stated in pervious recommendations, should there be a conflict between meeting the desired discharges below the dam and water levels for the reservoir; the water levels for the reservoir should receive priority. It is assumed that in most years the fishery needs for both can be accommodated.







# MISSOURI DEPARTMENT OF CONSERVATION

MAILING ADDRESS:  
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Jefferson City, Missouri

Telephone 314/751-4115  
LARRY R. GALE, Director

March 20, 1987

**50** YEARS of  
CONSERVATION

1937 • 1987

Mr. Kent D. Keenlyne  
Missouri River Natural Resource  
Committee Coordinator  
U. S. Fish and Wildlife Service  
P. O. Box 986  
Pierre, South Dakota 57501

Dear Mr. Keenlyne:

The Missouri River Division, Corps of Engineers Annual Operating Plan Coordination Meeting provides the first opportunity for input by the Missouri River Natural Resources Committee. We are pleased that the Committee has become a reality and are confident that it will play a significant role in future decisions affecting the river's fish and wildlife resources.

Though we will be unable to attend the March 24, 1987 meeting, please acknowledge our support of the recommendations offered by the upstream states. It is our conviction that the river system as a whole will ultimately benefit if reservoir management can positively impact specific reaches. Hopefully, this can be documented by future studies.

Please contact Mr. Norman P. Stucky at the above address if you wish to discuss this matter further. Your efforts in coordinating activities/recommendations of the Committee are appreciated.

Sincerely,

LARRY R. GALE  
DIRECTOR



31

COMMISSION

JEFF CHURAN  
Chillicothe

JOHN POWELL  
Rolla

JOHN B. MAHAFFEY  
Springfield

RICHARD T. REED  
East Prairie



UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
South Dakota State Office (FWE)  
Post Office Box 986  
Pierre, South Dakota 57501

December 29, 1987

MEMORANDUM

TO : MRNRC Members

FROM : Coordinator  
Pierre, South Dakota

SUBJECT: Minutes of MRNRC December 7, 1987, meeting.

Minutes of the meeting are being prepared and distributed from the Coordinator's office at the request of the Chairman. All seven states were represented at the annual meeting. Attached is an Agenda which can be used as a reference in following the subsequent report.

A decision was made to assess how well recommendations for reservoir operations were followed this year. A coordinated set of recommendations were prepared by the Committee in March for the Reservoir Control Center (RCC). Individuals were contacted this fall by the RCC for brief summaries of the results of the year for the Corps Annual Operating Plan (AOP). The affected Committee members will forward their written reports to the Coordinator to compile so that documentation of success or failure can be made. Intention of documentation is to find the most effective way to deal with important shortcomings once identified. Mode of operation in the future will be for representatives to send their recommendations to the Coordinator by August 1; the Coordinator will then compile them, work out any conflicting recommendations between members, and send compiled recommendations to Committee chairman for signature. To be most effective, the recommendations need to be in to the RCC by the end of September for inclusion in AOP for following year. The Committee will also continue to meet with the RCC in March of each year, as has been done in the past, to fine tune the generic recommendations in light of run-off projections for the year. Since we are just starting the early or "generic" recommendation process, the representatives will send their recommendations to the Coordinator by the end of December, 1987.

As a related subject, Dennis Unkenholz indicated that it would be valuable to have the background to the Committee compiled, as well as



past operation recommendations, if available. As a consequence, he will contact Emil Barard, North Dakota, and Bill Wiedenheft, Montana, for copies of past recommendations made through the Ad Hoc Committee for the North Central American Fisheries Chapter. His report will be due in August, 1988, to be used for next year's August meeting and will be included in next year's annual report of the Committee.

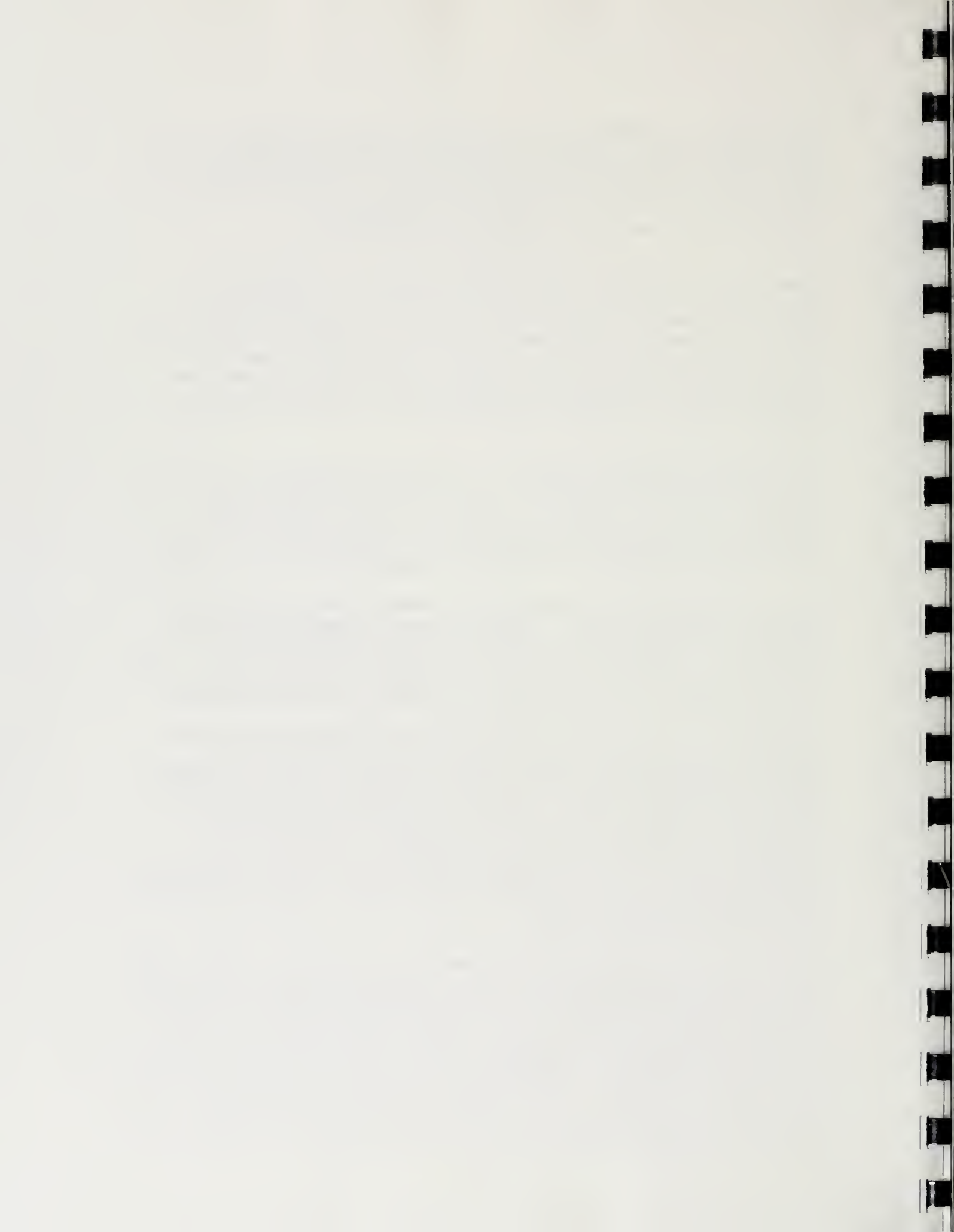
The second item of preparing an annual report of the work of the Committee was approved. Purpose of the report is a convenient way to track Committee actions and decisions, and serve as a vehicle for Committee members to report back to parent organizations on activities and accomplishments of the Committee. A list of Committee members, copy of the Constitution and Bylaws, copy of annual reservoir operation recommendations and results, and minutes of meetings were some items identified to be included in the annual report. The Coordinator is to prepare a draft of the 1987 Annual Report by mid-January for member review.

A suggestion was made to compile a listing of resource agency personnel working on the Missouri River for use by Committee members. Tom Gengerke, Iowa, will contact the agencies and put a list together in January, 1988. The list will be compiled on IBM compatible software and given to the Coordinator when completed. The Coordinator will update the information annually for use by the Committee.

The question of an information bureau, speakers bureau, or listing of prepared presentations was a result of several requests (one by the Missouri Basin States Association for an upcoming Missouri River Symposium) for speakers or presenters on Missouri River interests. The decision was that until such time when requests become quite frequent, state delegates can be called upon to coordinate any such requests.

A question arose as to the relationship of the Committee to various organized or unorganized groups having an interest in the river. Although recognized as an issue to deal with in the future, consensus was to let the idea ride for now until the Committee has had a chance to become fully operational. It was noted that, unlike most special interests, fisheries, wildlife, and recreational interests are not organized on the river and that representation of these uses and interests has fallen on the shoulders of the various state and federal agencies charged with representing such resources. It was decided that future direction of the Committee in this area will depend somewhat on the outcome of Agenda item 8.

The Coordinator explained how the Committee had received a request from RCC to identify and prioritize resource research needed to better manage the river. The Corps had approximately \$200,000 identified to perform studies to better manage the river and requested assistance from the Committee to help prioritize work. Members thought the exercise useful but believed there was an additional need to flesh out the research needs. The Coordinator, since that is where the various study proposals were sent, is to compile related study suggestions and send out a "straw man" to the members for review. Depending upon how many composite studies are identified and how much additional work will be needed, the





Chairman may assign the studies to various members to rework later. The Coordinator is to contact the RCC before the end of January on what they intend to do with the list or whether there is additional need to rework the list.

A newsletter was viewed as an important vehicle for communication but concern was expressed over the amount of time involved in preparing one and whether one was needed as yet. The Committee decided to send river related items that would be of interest to others to the Coordinator to be copied or distributed on an "as needed" basis. An example was the far reaching Inouye Bill dealing with settlement of Indian issues on the river which is of interest to all the states.

The recent announcement by the Missouri Basin States Association that their office would be closed effective April 1, 1988, caused several members to wonder whether this spelled a new or expanded role for the MRNRC. Several mentioned that the demise of the MBSA was a direct result of having only a single interest, i.e., division of the waters which led to conflicts and a non-productive adversary forum. Several observed that the MRNRC needed to also be cautious of becoming a single purpose function. Larry Peterman, Montana, mentioned that efforts may be under way by the states to reconstitute the organization under a different format. He will investigate the status of the new effort and examine ways to become involved at the ground level of any new committee as well as examine funding options or opportunities.

Two other items were added to the agenda. One was a letter of appreciation to George Patnode, RCC, who is retiring at the end of the year. The second was the need to hold additional meetings to conduct Committee business. It was decided that the Committee needs to set about half a day aside in association with the Midwest to do committee work (this next year the Annual Meeting may have to be held in association with a different function since the Midwest will be held in Ohio giving several upper basin states travel problems). The decision was also to rotate a mid-summer meeting with the Chairman as host. Approximately 1 1/2 days would be scheduled, usually in August, to generate the "generic" recommendations for operations of the system for the year and work out other items. Along with the working session, a field trip would be developed to allow members to see the river in areas other than their own and any selected issues of local concern. Regularly scheduled meetings for the Committee would be done in August, one in December (usually in association with the Midwest), and one in March with the Corps (likely in Omaha). Other meetings would take place through conference calls or in smaller groups called especially to handle certain issues or work items.

A couple members asked what the status of the Coordinator position was. They indicated that they understood the Service had previously committed to providing a full-time Missouri River Coordinator. The Chairman asked Kent Keenlyne to give a report on the status of the position. Keenlyne explained that some restructuring had occurred within the Service in the last year which established a Missouri River Coordinator position in the Service. Technically, his position was organizationally located in Denver but that he was co-located in Pierre for support services. The





locating of the position was in accordance with the state's request at the founding meeting in Omaha. In effect he wore two "Coordinator" hats, one for the MRNRC which involved about 1/3 of his time, and another as a Missouri River coordinator within the Service between several divisions or activities and two Regions. A question arose as to what would happen if the Service and the Committee were to take different positions on an issue. The Coordinator indicated that he did not necessarily see that as becoming a big issue since he does not have Service line authority and, therefore, acts more as a technical advisor to the Service offices nor did he see much conflict within the Service since the Chairman would be signing correspondence representing the Committee.

Larry Peterman, Montana, took over as Chairman for 1988, and Ken Brunson, Kansas, became Chairman-elect. Peterman provided his goals as: (1) getting the organization as fully functional as a committee, (2) examining avenues for funding to carry out Committee activities (such as travel, etc.), and (3) finding a means of integrating the MRNRC with any new MBSA-type of organization.

Respectfully submitted

Kent D. Keenlyne, Coordinator



Agenda

Missouri River Natural Resources Committee

December 7, 1987

Milwaukee, Wisconsin

Opening - Chairman Tom Genkerke, Iowa

Introductions

Discussion Items

1. Compiling response to operations recommendations.
2. Preparing Annual Report.
3. Compendium of Missouri River resource people.
4. Information bureau.
5. Role with resource interest groups.
6. Follow-up on research recommendations.
7. Need for a newsletter?
8. MBSA shutdown - New role for MRNRC?

Exchanging the Gavel

Goals for 1988 - new chairman - Larry Peterman, Montana



UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
South Dakota Field Office (ES)  
Post Office Box 986  
Pierre, South Dakota 57501

June 16, 1987

George T. LaBlonde, Jr.  
Colonel, Corps of Engineers  
Deputy Division Engineer  
Missouri River Division  
P.O. Box 103, Downtown Station  
Omaha, Nebraska 68101-0103

Dear Colonel LaBlonde:

Several months ago, Duane Sveum and Dick Taylor of your staff requested that I compile a prioritized list of wildlife study needs related to reservoir operations on the Missouri River. As Coordinator for the Missouri River Natural Resources Committee, I was to coordinate this prioritization through the newly formed Committee.

To expedite the process, I sent a request to Committee delegates to send me lists of study or research needs relating to both long and short-term management of the river and to subdivide those needs into management and development needs. Once receiving those lists, I compiled the information and sent it back for ranking by the delegates. The preferred method would have been for Committee members to meet commonly on the ranking so that the studies could have been better described and defined for all. However, recognizing that the end of the federal fiscal year is drawing near, this process should serve your immediate needs. The Committee would like to revisit the proposed studies and ranking some time in the future and have an opportunity to flesh out ideas on the top ranking proposals.

I know this exercise has been useful to the Committee, and several members expressed interest in following up on fleshing out the concepts and reassembling them into logical units. Please advise us as to the next step in the process of implementing the studies and development needs.

Sincerely,

Kent D. Keenlyne  
Coordinator, MRNRC

Attachment



Compiled by MRNRC, June 1987.

Ranking of needs:

#### SHORT-TERM NEEDS

##### Management Decision

1. An evaluation of the current success of paddlefish reproduction in the Missouri River.
2. Studies to determine the reproductive habitat requirements of paddlefish and pallid sturgeon in the Missouri River.
3. Identify instream flow needs below each dam.
4. Determine life history and population information on pallid sturgeon.
5. Status survey of pallid and lake sturgeon in the Missouri River.
6. Determine where paddlefish spawning occurs in Missouri River and tributaries.
7. Develop predictive models for fish and wildlife.
8. Fish movements in response to reservoir releases, reservoir currents, and sediment inflows should be studied.





9. Habitat degradation due to sediment should be calculated and predicted so that alternative management schemes can be planned.
10. Year 2 of secondary production studies in the unchannelized river downstream from Gavins Point Dam and a comparison with secondary production estimates from upstream of Gavins Point Dam.
11. An index method for annual paddlefish recruitment.
12. Determine paddlefish migrations due to flow and temperature conditions.
13. A standard survey method to correlate annual recruitment with year-class development in paddlefish.
14. Status survey of sicklefin and sturgeon chubs in the Missouri River.
15. Determine the distribution and abundance of least terns and plovers and evaluate the effects of the operation of dams on these species.
16. Secondary production from backwaters (example from the Niobrara River to be compared with secondary production from downstream of the Niobrara River).



17. Continue ongoing research to identify sites and determine production for terns and plovers on the main stem Missouri River system.
18. Study design for carbon/nutrient studies.
19. Management potential for endangered fish species should be determined.
20. Surveys to locate populations of state and federal endangered, threatened, or candidate fish species.
21. Electrophoretic studies on paddlefish and rainbow trout to determine if different genetic strains exist.
22. Review baseline studies of distribution, nest site selections, and human and livestock disturbances on piping plovers.
23. Determine impacts of fluctuating Missouri River discharges on nesting behavior and success of least terns and piping plovers.
24. Evaluate reproductive success and needs of the rainbow trout below Ft. Peck Dam.
25. Determine tern and plover nest site fidelity in response to yearly reservoir level changes.



26. Identify and quantify roost sites used by wintering bald eagles on COE and private property.
27. Review of osprey use of Missouri River.
28. Determine need for future cottonwood forests and develop a management plan to insure continued roost habitat for wintering bald eagle populations.
29. Literature review and report of nesting and feeding needs of osprey and eagles on large rivers.

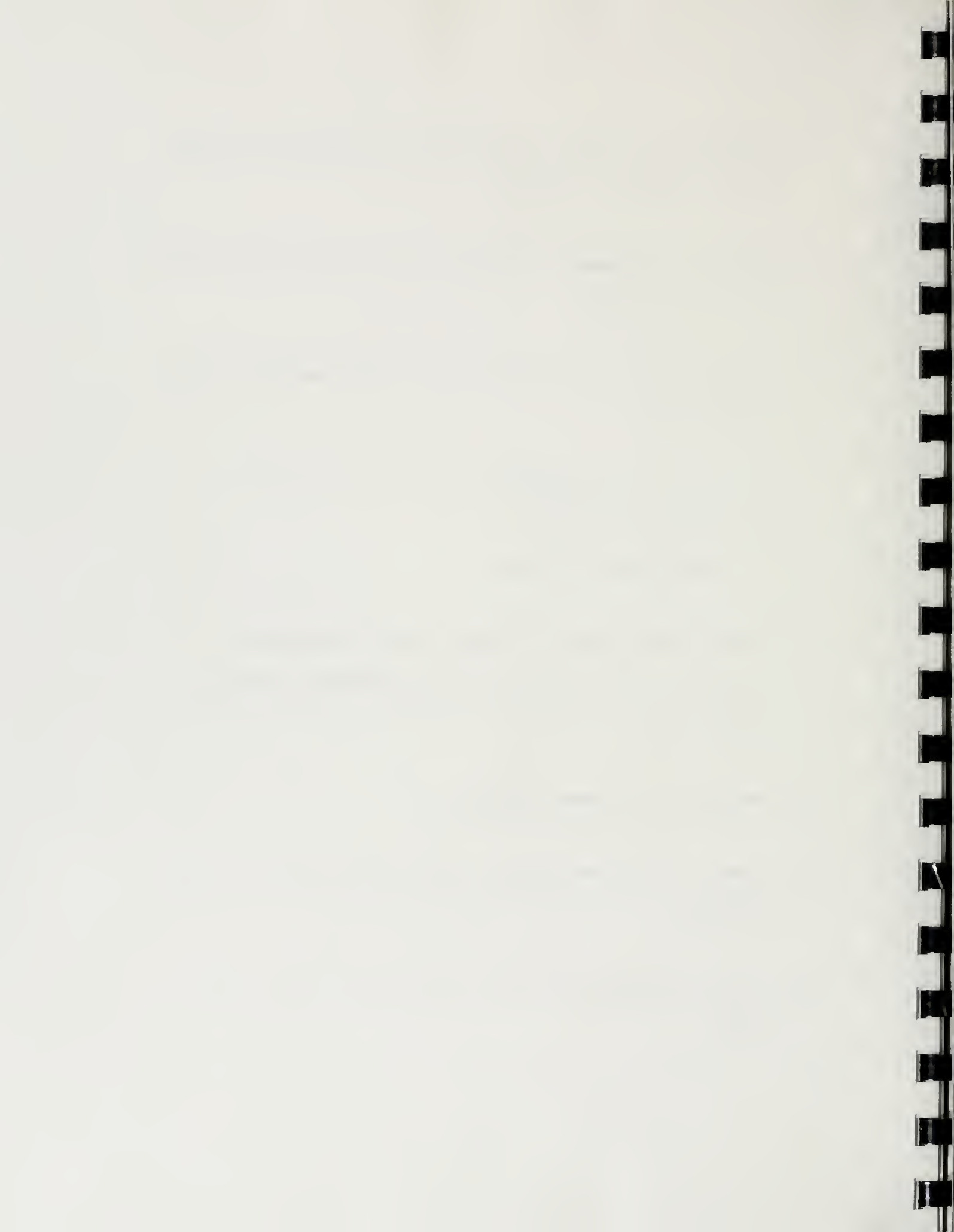
#### Development

1. Rehabilitation of isolated oxbows and chutes through demonstration projects.
2. Lewis and Clark Lake reef development.
3. Develop 10-100 acre subimpoundments adjacent to the reservoirs for walleye, northern, and other fingerling production.
4. Improvement of reclamation of closed embayments.
5. Gavins Point Dam tailwater fish habitat.





6. Experiment with methods to modify existing sand bars and islands for tern and plover production.
7. Structural developments to enhance backwater habitat upstream from Lewis and Clark Lake.
8. Construction of rearing ponds adjacent to the reservoirs. Sites identified are:
  - Rainbow Bay - two ponds
  - Perch Bay - one pond
  - Duck Creek Bay - one pond
9. Install walleye spawning substrate in Fort Peck and other reservoirs. A pilot project should be initiated to evaluate several sites.
10. Manawa Bend development project.
11. Examine use of dredge spoils to create nesting habitat for terns and plovers.
12. Install artificial structures for osprey and colonial nesting birds.



Ranking of needs:

## LONG-TERM NEEDS

### Management Decision

1. Perform studies to determine the amount of and economic value of recreational fishing on Missouri River reservoirs and sections.
2. Identify relationship between critical habitat of various species and Annual Operating Plan.
3. Develop long-term monitoring program for fish, wildlife, and habitat (adopt standard methods for evaluating the various ecosystems).
4. Develop system-wide fishery objectives and needs.
5. Develop instream network habitat analysis: (a) instream flows, and (b) dynamic flow stage-discharge models for select reaches of the Missouri River.
6. Identify specific habitats which are critical to fish species which are stressed, such as paddlefish, sturgeons, blue sucker, and other species.
7. Water budgeting needs and potential for allocation of water for recreational needs in relation to future development and plans.



8. Determine relative contribution of backwater aquatic and wetland habitats (i.e., oxbows, cutoffs, and chutes) to the total fishery productivity of the Missouri River ecosystem.
9. Compile detailed inventory of all existing backwater, oxbow areas and describe their present condition.
10. Study bed aggradation, degradation, and siltation impacts on recreation, the habitat base for endangered species, and other fish and wildlife.
11. Current economic benefits of recreational activities on the Missouri River system.
12. Establish permanent sampling stations representative of certain habitat types and accurately mapped and, where possible, fitted with a bench mark. Permanent stations lend themselves to studies of habitat changes with special regard to sedimentation, vegetation, and pollution.
13. Options to check the bed degradation process and potential remedial actions to correct problems.
14. Evaluate effects of operating reservoirs in an unbalanced mode.



15. Develop five-year Creel Surveys to be representative of the various "types" of river habitat and developed on a coordinate basis so that information collected would be comparable from survey to survey.
16. Expanded studies on paddlefish biology in relation to operation of the system and ways we can achieve water management opportunities to enhance survival.
17. Reservoir inflow and water quality correlation with spawning success of key fish species.
18. Inventory areas which are silted in but might be reclaimed by dredging, flow modification, etc.
19. Develop a directory of agencies and individuals involved with the resource.
20. Complete carbon/nutrient studies for long-term fishery productive and maintenance needs.
21. Long-term effect of a coordinated system-wide approach to water management (unbalanced scheme) for the main stem reservoirs.
22. Assess inter-reservoir transfer of fish and associated impact on downstream fisheries as influenced by reservoir releases.





23. Evaluate utilization of artificial brush shoals, reefs, and other artificial habitats.
24. Establish a Tagging and Marking Program to identify fish migration and movements on selected species.
25. Assemble a species list - possibly including some classification pertaining to relative abundance such as common, rare, abundant, exotic, etc.
26. Develop a centralized library of references which would be kept by the coordinator.
27. Develop program to evaluate shoreline seeding to enhance development of shoreline vegetation (especially in conjunction with an unbalanced system).
28. Methods of operation which might moderate or mitigate drastic effects to oxbows along the unpooled portion of the river.
29. Identify access sites and monitor access development (include federal, state, county, municipal, and others).
30. Define the distribution of fishes within the system.
31. Gathering of baseline information on pesticide levels in fish and wildlife.



32. Assemble species specific information so that data deficiencies are uncovered.
33. Develop a facility/access list for the river.
34. Collection of data upon which to base, where appropriate, recommendations for uniform fishing regulations.
35. Establish aerial surveys to monitor recreational use to count fishing, bank fishermen, ice fishermen, ice-fishing houses, and pleasure boats.
36. Compile a list of references on the Missouri River and provide it to member organizations.
37. Determine current regulations for both sport and commercial fisheries.
38. Determine nature and importance of the commercial fisheries of the Missouri River.
39. Studies to determine time required to establish shoreline vegetation around reservoirs and assess the effect of operations on vegetation in downstream reservoirs.



40. Test fishing gear to determine fishery population characteristic in different habitat types.
41. Identify and examine sites which could be used for future bald eagle and osprey reintroduction (hacking) sites.
42. Inventory islands and any other unique habitat features.
43. Review of historical hydrological cycle in comparison to present operating plan for system.
44. Review commercial fishery and fish marketing potential.
45. Studies contrasting the impacts of different land uses (grazing, haying, etc.) in riparian areas along the Missouri River.

#### Development

1. Study biologic and economic efficacy of reestablishing hydrologic connections to isolated oxbows, cutoffs, and chutes.
2. Develop systems approach to mitigation of impacts to both unchannelized and channelized portions of the river due to degradation, impoundment, and channelization.





3. Identify potential sites to enhance backwater habitats for fish.
4. Develop means to allow portions of the navigation channel to return to a less controlled pattern of meandering (perhaps as an experimental study).
5. Develop discharge regime for lower Missouri River that provides for navigation and flood control while mimicking natural stream flows to recapture productivity.
6. Identify potential sites for construction of spawning channels for river fish.
7. Identify potential sites for artificial spawning substances in river and reservoirs.
8. Locate potential development sites (bays, subimpoundments, etc.) along Missouri River for fingerling production.
9. Studies where dredged or constructed stands can be formed for tern and plover nesting.
10. Locate potential sites for reef development.
11. Fish bypass construction at dams.
12. Develop shoreline community to counteract bed degradation.



13. Develop methods to protect banks while protecting public interests (i.e., resources) in sensitive areas.
14. Develop means to obtain cottonwood regeneration along the river.
15. Bazile Creek development project.
16. Studies to identify sites for artificial nesting structures for fish-eating birds.





TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

LARRY J. WILSON, DIRECTOR

NW Regional Office  
Fish Management Section  
R. R. Box 7722  
Spirit Lake, Iowa 51360

February 13, 1989

Kent Keenlyne, Coordinator  
Missouri River Natural Resources Committee  
U. S. Fish and Wildlife Service  
P. O. Box 986  
Pierre, South Dakota 57501



Dear Kent:

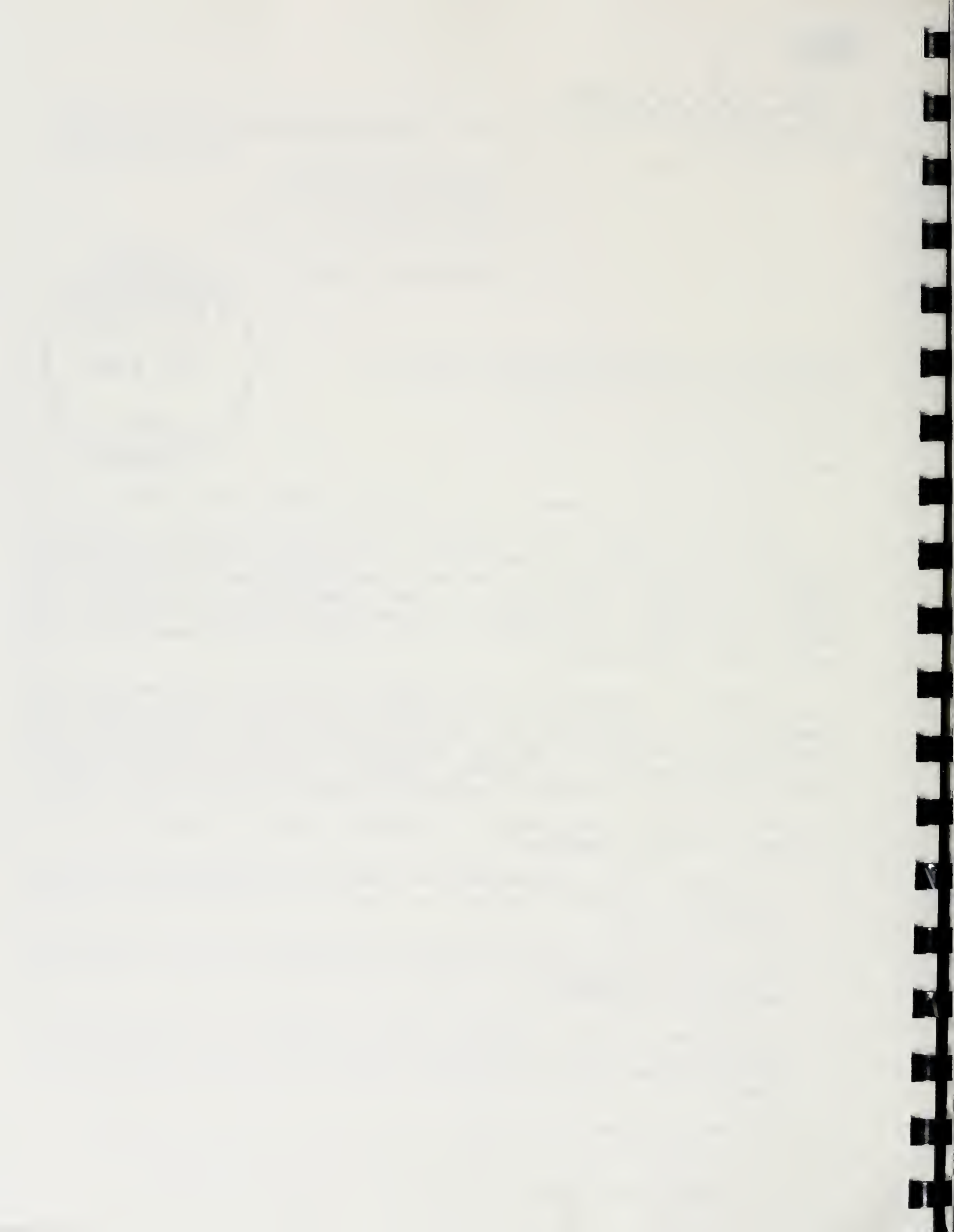
The following represents the "Chairman's Report" for 1987.

The first year of the Missouri River Natural Resources Committee represented a period of definition. The form and function of the committee was established and as the potential values of this endeavor become ever-more apparent, a real commitment from member and supporting agencies to make the committee work was realized. All seven states were represented at the first annual meeting of the newly-formed organization.

It was my intention that member states feel at ease with the organizational structure of the Missouri River Natural Resources Committee. The Constitution and Bylaws were drafted and revised and the role of the MRNRC in natural resource management was determined to the satisfaction of all member states. This resulted in all seven states accepting and signing the organizational document during 1988.

The following represents a partial list of specific actions carried out by the committee:

1. A protocol was established for committee recommendations to the Reservoir Control Center for use in preparing the Annual Operating Plan.
2. As background to future committee recommendations, the history of operation recommendations would be compiled before the next meeting of the MRNRC.
3. A listing of all resource agency personnel involved with the Missouri River was identified as a needed communication tool. This listing would be compiled prior to the next meeting of the MRNRC.
4. The exact status of the coordinator's position was finalized.



Kent Keenlyne  
Page 2  
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5. Future meeting schedules were decided upon which would ensure that the committees business could be conducted.

A number of issues dealing with the Missouri River were discussed. Perhaps this signifies one of our most important accomplishments. A forum was established for the discussion of system-wide resource management issues. Lines of communication were opened and a better understanding of the Missouri River ensured through the establishment of the Missouri River Natural Resources Committee.

Sincerely,



Thomas W. Gengerke  
Regional Fisheries Supervisor

TWG/wjs

P.S. Kent - as part of the annual report compilation, I would suggest a page which shows meeting locations and chairman.





## Coordinator's Report

Two very important events occurred this year as the result of formation of the Committee: (1) for the first time, a vehicle exists for resource people to view the entire Missouri River as an interrelated system and (2) wildlife and related considerations have been brought into the planning process at the Annual Operating Plan formulation stage.

At present, the Committee is the only functional Missouri River group cooperating on a perspective of the whole length of the river. We were fortunate to be served by a chairman who was experienced with the long-standing cooperative committee on the Upper Mississippi and a vice-chairman well experienced with the Columbia River coordination efforts. Such depth of experience allowed the group to make good progress in defining group roles and better means of operating effectively.

The first test was to prepare recommendations for the Corps on operations of the reservoirs for the summer. Having formed in December, the March date for providing recommendations to the Corps (as the AFS group did) was a difficult coordination task. To meet the Corps' needs, state comments were sent directly after discussion by phone with adjoining states. The effort, however, was a productive lesson from the standpoint that timing of the process would be better if recommendations could be provided for development of the Annual Operating Plan for the coming year. As a result, some changes were made so that, in the future, annual meetings of the group would occur in August to formulate recommendations for inclusion in the Annual Operating Plan. The spring meeting would still occur to fine tune recommendations reflecting information obtained regarding runoff projections from the mountains.

From the Coordinator's standpoint, the willingness of the members to work together was much appreciated. There is no doubt that this group will play a significant role in the future of the Missouri River.



## CONSTITUTION OF THE MISSOURI RIVER NATURAL RESOURCES COMMITTEE

The Missouri River Basin States, of these United States, establish this Constitution of the Missouri River Natural Resources Committee in order to promote and ensure the good stewardship of the Missouri River.

The following Articles of this Constitution shall describe, define, and delineate this organization by structure and function.

Article I - The name of the organization shall be the Missouri River Natural Resources Committee, hereinafter referred to as the Committee or the MRNRC.

Article II - The objectives and purposes of the Committee shall be:

1. To facilitate a systems approach to managing the natural resources of the Missouri River.
2. To promote preservation, wise utilization, and enhancement of the natural and recreational resources of the Missouri River.
3. To formulate policies, plans, and programs for carrying on cooperative research and management studies for the above-stated purposes.
4. To keep necessary records on consumptive and recreational use, and to publish and distribute reports.
5. To recommend to the governing state bodies activities and programs which further the Committee objectives.
6. To provide coordinated recommendations to appropriate agencies on the operation and maintenance of the Missouri River main stem management.
7. To make coordinated research and study proposals to appropriate management and approval agencies in furtherance of the Committee objectives.

## Article III - Membership and Meetings

### 1. Membership

The membership of the Committee shall be the following classes:

- a. Official Members and Delegates - The official members (seven) shall be: (1) Montana Department of Fish, Wildlife and Parks; (2) North Dakota Game and Fish Department; (3) South Dakota Department of Game, Fish and Parks; (4) Nebraska Game and Parks Commission; (5) Iowa Department of Natural Resources; (6) Kansas Department of Wildlife and Parks; and (7) Missouri Department of Conservation. The appointed delegates shall constitute the Committee. Each official member shall be represented by a delegate appointed by the responsible administrator (director or commissioner) of the said agency. This delegate shall be a person having knowledge of and interest in the Missouri River resources and shall be a person of responsible administrative authority who can make decisions on behalf of his agency provided the same are not contradictory to its policies and do not exceed its financial limitations.
- b. Ex-Officio Members and Delegates - The U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers will serve as ex-officio members on the Committee. The ex-officio members shall appoint delegates as the Service Regional Directors or the Division Engineer deems appropriate. This delegate(s) shall be a person having knowledge of and interest in Missouri River resources. An ex-officio delegate can fully participate in Committee discussions but will not be an official voting member on Committee decisions.
- c. Cooperating Agencies - Other governmental agencies and private organizations interested in the resources of the Missouri River may serve as cooperating agencies with Committee approval. Such approved agencies may appoint members as they deem necessary and proper to aid the work of the Committee.

### 2. Meetings

- a. Regular - The Committee shall hold regular meetings at times and places determined by the Committee.
- b. Special - A special meeting may be called by the Chairman at the request of four or more official members.

#### Article IV - Offices and Committees

1. The officers of the MRNRC shall be the Chairman and the Chairman-Elect. The Chairman shall serve a one-year term. The Chairman-Elect shall also serve a one-year term, and succeed to the Chairmanship without further election. The Chairmanship and Chairman-Elect will be rotated in the following order: Iowa, Montana, Kansas, North Dakota, Missouri, South Dakota, and Nebraska. In the event of the resignation of an officer, that member (agency) represented shall appoint a replacement for the unexpired term. Only official delegates shall be eligible to serve as elected officers.
2. The U.S. Fish and Wildlife Service shall provide a Coordinator to the Committee.
3. Committees -
  - a. Official Committee - The Chairman, Chairman-Elect, and the official delegate from each state not represented by an officer shall constitute the Official Committee. Each state will have one vote (the state designee) on issues where a vote is required. The U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service may name ex-officio members to the Committee.
  - b. Standing Committees - The Committee shall have authority to establish Standing Committees to investigate an assigned subject and report at the regular meetings. New Standing Committees can be established by the Official Committee and existing Standing Committees disbanded if their work is deemed complete.
  - c. Ad Hoc Committees - The Chairman shall appoint Ad Hoc Committees for special assignments. An Ad Hoc Committee is a temporary committee with a short-term assignment. It shall be terminated upon presentation and acceptance of its report.

#### Article V - Procedures

1. Roberts Rules of Order shall be followed in all meetings.
2. Motions and seconds may be made by the official state delegate or his designee.
3. Each official member shall be entitled to only one vote.
4. The presence of five of the seven official members shall constitute a quorum, and four affirmative votes will be necessary to pass a motion. Proxy, mail ballot, or telephone vote will be permitted.



## BYLAWS

### 1. Duties of Officers

- a. Chairman - The Chairman is responsible for the business of the MRNRC, makes appointments to any Ad Hoc Committees, and exercises such other functions as may be determined from time to time by action of the members. The Chairman shall provide for and shall preside at the annual meeting, at any special meetings, and at meetings of the Official Committee.
- b. Chairman-Elect - The Chairman-Elect shall assume the duties of the Chairman in the Chairman's absence or inability to act. The Chairman-Elect shall be prepared to take over the duties of the Chairmanship when becoming Chairman.
- c. Coordinator - The Coordinator answers to the Chairman, who speaks for the Committee. The Coordinator shall assist the Chairman in furthering the goals and objectives of the MRNRC, organizing the Committee's activities, and coordinating among member agencies of the Committee, other federal, state, and local agencies, and the public. The Coordinator shall also be required to perform specific tasks associated with the administration of the Committee, such as:
  - (1) Maintain the administrative record of all Committee activities.
  - (2) Manage the development of information and reference documents, with such responsibility to include oversight of all records, documents, and publications that are to be either prepared or adopted by the Committee.
  - (3) Supervise the development of coordinated natural resource plans.
  - (4) Prepare for publication the Proceedings of the Annual Meeting and other publications and publicity materials as the Committee may direct.
  - (5) Serve as the Chairman's representative at meetings and conferences, and at Ad Hoc Committee meetings, as appropriate.

### 2. Ex-Officio Agencies

Representatives of ex-officio agencies are encouraged to assist the Committee in coordinating activities and in supplying such services and information as may assist the Committee to achieve its objectives. Representatives of the ex-officio agencies may serve as members of Standing or Ad Hoc Committees, present reports, and participate in discussions at annual and special meetings.



### 3. Responsibilities of Committees

- a. Official Committee - The Official Committee of the MRNRC shall meet at least annually. Additional meetings may be called upon approval by representatives of the member states. Actions of such urgency that cannot be deferred until the next regularly scheduled meeting may be decided via conference call or emergency meeting. A full report of all such actions shall be included in the Chairman's report at the next annual meeting. The Official Committee may call on the coordinator and ex-officio member agencies for assistance.
- b. Ad Hoc Committees - Ad Hoc Committees shall be appointed by the Chairman as needed.

### 4. Order of Business -

The order of business at the annual meeting of the Committee shall include, but shall not necessarily be limited to, the following:

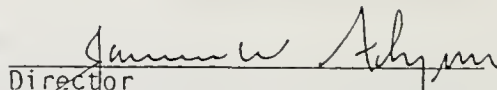
- a. Call to order by the Chairman.
- b. Roll call and determination that a quorum is present.
- c. Approval of minutes of the previous meeting.
- d. Report of Chairman on actions of Committee.
- e. Report of Coordinator.
- f. Reports of Standing Committees and recommendations to the Committee for later consideration.
- g. Reports of any Ad Hoc Committees.
- h. Old business.
- i. New business.
- j. Installation of newly-elected officers.
- k. Appointment of committees.
- l. Adjournment.

### 5. Amendments to Constitution and Bylaws

The Constitution and Bylaws may be amended at any annual or special meeting by unanimous vote of all official members.


MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS

4-18-88  
Date

  
Director

NORTH DAKOTA GAME AND FISH DEPARTMENT

9-19-88  
Date

  
Commissioner

SOUTH DAKOTA DEPARTMENT OF GAME, FISH AND PARKS

5/31/88  
Date

Douglas Hoyer for Dick Beringson  
Secretary

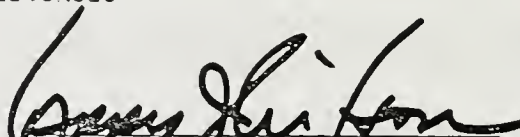
NEBRASKA GAME AND PARKS COMMISSION

Sept. 26, 1988  
Date

Rex Arnack  
Director

IOWA DEPARTMENT OF NATURAL RESOURCES

May 3, 1988  
Date

  
Director

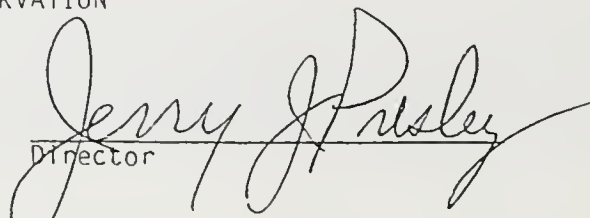
KANSAS DEPARTMENT OF WILDLIFE AND PARKS

10/16/88  
Date

  
Secretary

MISSOURI DEPARTMENT OF CONSERVATION

10-17-88  
Date

  
Director



